SEPTEMBER 1951

FIREMEN

FIFTY-SIXTH YEAR · NATIONAL FIRE PROTECTION ASSOCIATION

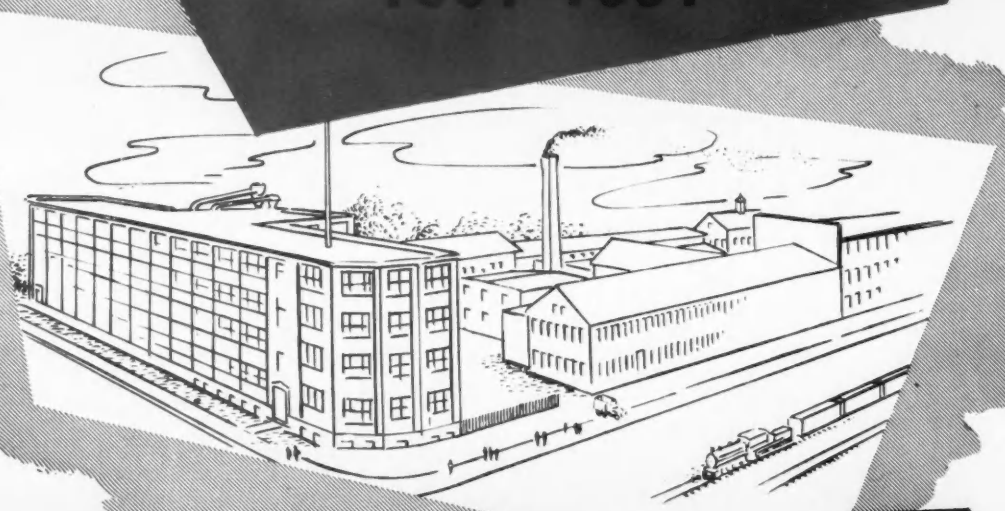
VOLUME 20, NUMBER 3, COPYRIGHT 1951 NATIONAL FIRE PROTECTION ASSOCIATION — PRINTED IN U. S. A.

Observe Fire Prevention Week • October 7-13

100 Years

IN THE PUBLIC SERVICE

1851-1951



During 1851, in the City of Boston, Massachusetts, was made the first practical application of the Morse telegraph to fire signaling, providing a public and always accessible means for calling the fire department. John N. Gamewell shortly thereafter, acquired patent rights for the system of fire signaling thus applied in Boston and which has since become universally known as The Gamewell Fire Alarm System.

The well estabished reputation for reliability, durability, and efficiency of Gamewell equipment, produced by a small force of highly skilled workmen, has resulted in the widespread use of The Gamewell System not only in the U. S. A. but also in many other countries.

The Gamewell Company, lineal successor to John N. Gamewell, deeply appreciates the widespread confidence in its products and will continue to incorporate therein features dictated by 100 years experience that are essential to the protection of life and property.

The GAMEWELL COMPANY

NEWTON UPPER FALLS 64, MASSACHUSETTS

IN CANADA: NORTHERN ELECTRIC COMPANY, LTD., BELLEVILLE, ONTARIO

From Childhood Every Indian Learned to Hunt -

No Matter How Hard You Hunt You Can't Find Better Fire Fighters Than

INDIAN FIRE PUMPS

Civilian Defense Needs INDIAN FIRE PUMPS to protect Communities from Fire Bombs. Write us now. Be prepared!

Why be uncertain about what fire fighting equipment to buy when tests have *proven* that INDIAN FIRE PUMPS are the fastest, most economical, all purpose extinguishers. For grass, forest, field, room and building fires and roof, rubbish, partition and Class A fires they have no equal.

Clear water or properly formulated wetting agents may be used. Nozzle adjusts for high pressure straight stream, spray or fog mist. 5-gal. tank and solid brass pump carries by handle or slung on the back.

Let us send you our catalog. It explains everything you want to know about INDIAN FIRE PUMPS.

D. B. SMITH & CO.

407 Main Street
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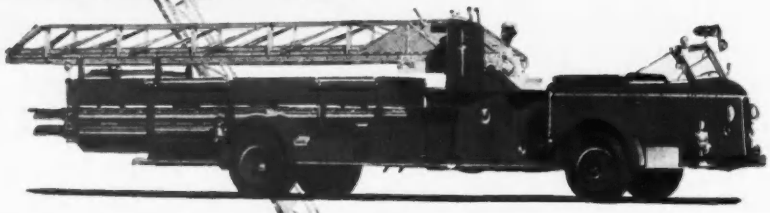
THERE'S *Extra Value* IN AERIAL

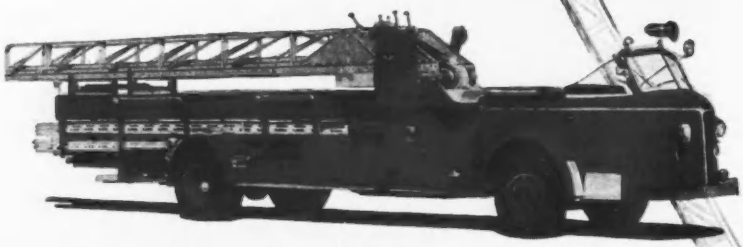
Safer Driving — with Cab-Ahead-of-Engine.
Safer Operation — Visual load indication.
Safer Aerial Ladder — All steel, maximum support.

Did you visit our exhibit, Booth 60, at the International Association of Fire Chief's Conference, Grand Rapids, Michigan, August 14-17? The many EXTRA VALUE features of American-LaFrance aerials were shown for your inspection and demonstration.

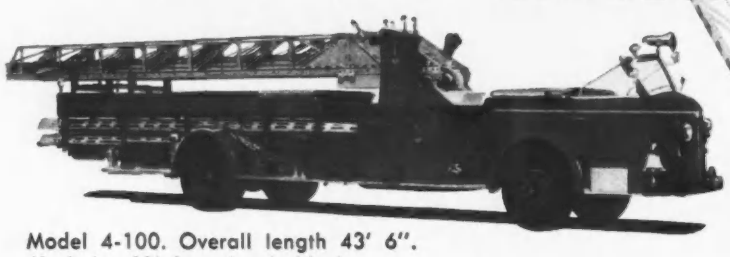
Model 4-65. All steel cab optional extra. 39' 7" overall length (includes 50' 2-section ladder)



Model 4-75. Overall length, 42' 4". (includes 50' 2-section ladder)



Model 4-85. Overall length 43' 6". (includes 50' 2-section ladder)

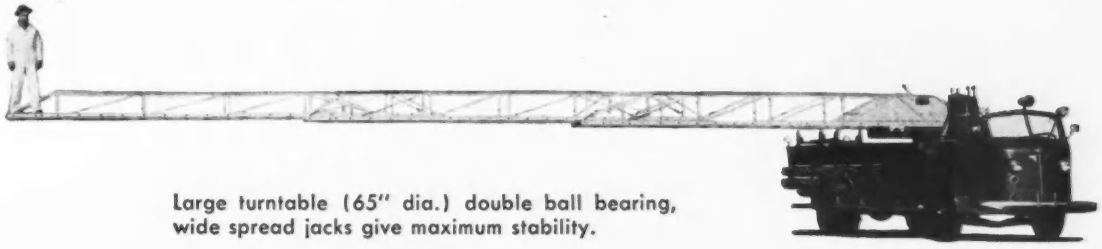


Model 4-100. Overall length 43' 6". (includes 50' 2-section ladder)

100' all-steel aerial at 60°, full extension will carry 5 men with top end unsupported.

AMERICAN-LAFRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U. S. A.
LAFRANCE FIRE ENGINE AND FOAMITE LIMITED
TORONTO 9, ONTARIO, CANADA

LADDER TRUCKS BY AMERICAN-LAFRANCE



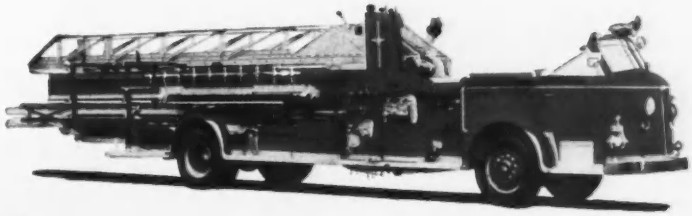
Large turntable (65" dia.) double ball bearing, wide spread jacks give maximum stability.

Low center of gravity permits high speed turns with safety.

Hydraulic levelling device, optional extra, for operation on steep grades. Before levelling on 10% grade.

Ladder levelled with truck on 10% grade. A single control for quick and positive levelling up to 15% grade.

Quintuplet—Available with 65', 75', 85' or 100' all steel aerial. Pump capacities available in all I.A.F.C. ratings.



Tractor drawn aerial—85' or 100' all-steel aerial ladder.

The ninth in a series of advertisements giving the EXTRA VALUES in American-LaFrance fire engines.

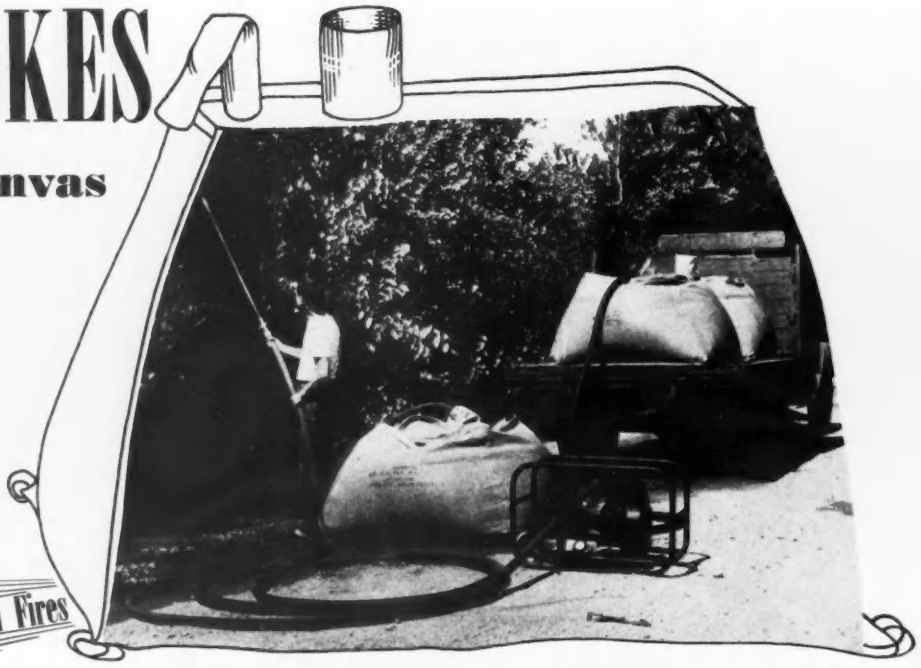
water . . . water . . . everywhere . . .

WITH

HARODIKES

portable, canvas

WATER TANKS



Reduce Forest & Rural Fires

Announcing . . . Something NEW

in Forest and Rural Fire-Fighting Equipment

MAIL THIS COUPON NOW for detailed information

HARODIKES COMPANY F 1-1
North Dighton, Mass.

Please send literature on the HARODIKES canvas water tanks to:

NAME .....

ADDRESS .....

CITY.....STATE.....

For those hard-to-get-at Woods and Rural Fires

USE HARODIKES

Available in 150-, 300- and 600- gallon sizes

For two years government equipment development centers and forest protection agencies have tested our canvas water dikes — AQUADIKE* and HARODIKE.*

We are pleased to announce that these dikes have met all rigid requirements as first class fire fighting equipment for forest and rural fires.

Now, with HARODIKES you can have your water when and where you want it.

* * * * *

HARODIKES are all-enclosed pyramidal dikes of heavy-duty canvas and can withstand hard usage on ground or brush. Designed for emergency storage or for relay pumper use in long or steep hose lay, the dikes are easy to fill, need no stakes or tie-down ropes and can be filled to capacity even on side slope. They are easily backpacked and readily stored and can be carried on pick-up or flat-bed truck. Low center of gravity point enables carrying of water on trucks at reasonable speeds without throwing vehicle off balance.

* Registered U. S. Patent Office.

HELP KEEP OUR COUNTRY GREEN

HARODIKES COMPANY
NORTH DIGHTON, MASSACHUSETTS

Worth Investigating!

a new and practical answer to the fire problem of smaller airports

Introducing the CARDOX AIRPORT FIRE TRUCK MODEL MC-750

NOW for the first time, *smaller* airports can have greater security with the type of fire protection used and proved at hundreds of military airports. Because it makes fire extinguishing equipment of improved effectiveness economically practical for a large percentage of the nation's smaller airports, the CARDOX MC-750 may well mark the start of a new era in light aircraft fire safety.

And for *larger* airports, this latest CARDOX Airport Fire Truck provides new and greater protection for such operations as fueling, motor warm-ups and more certain extinguishment of spill fires that can quickly become major disasters if inadequately safeguarded.

The CARDOX MC-750 combines in a single unit the most effective features of *three separate types of apparatus*. It is a carbon dioxide truck — a pumper — and a water or foam truck. The primary extinguishing agent is 750 pounds of low-pressure carbon dioxide. Supplementing the extremely fast extinguishing action of the carbon dioxide, water and/or foam provide effective cooling and blanketing to minimize the possibility of re-flashes. Used as a conventional pumper, the Model MC-750 furnishes up to 400 gallons of water per minute.

CARDOX also builds airport fire trucks for crash protection of larger aircraft
Ask for Specifications on Models AJ-2 and AK 2.25

SPECIFICATIONS

Extinguishing Mediums:
750 lbs. Low-Pressure (0° F.) Carbon Dioxide (Rechargeable from low-pressure storage or high-pressure cylinders).
200-250 gals. water in tank.
20-25 gals. air-foam concentrate in tank.

Discharge Apparatus:
Two 100-ft. carbon dioxide hose reels, 150 lbs. min. per nozzle.
Two 100-ft. water-foam lines with foam guns and fog nozzles.

Pump:
200 gpm at 200 psi.—100 gpm at 400 psi.
One 3-in. suction inlet; 2-1½ in. discharge outlets.
Auxiliary equipment and chassis as specified.

To the Chief Responsible for Airport Fire Protection:

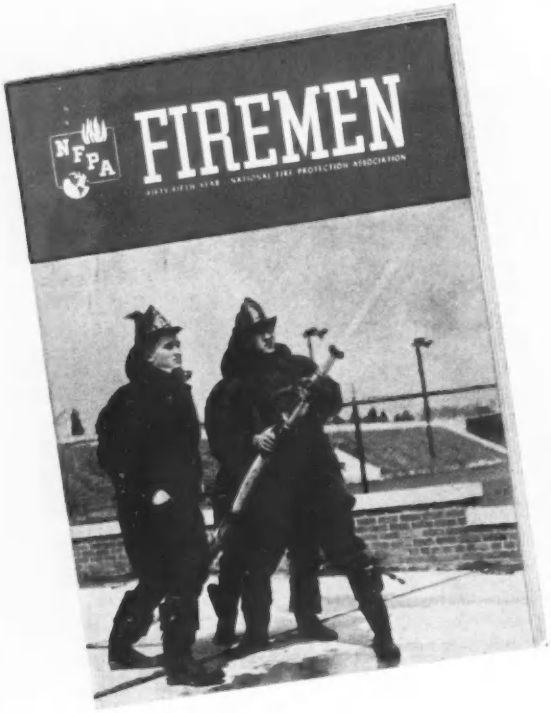
The CARDOX Airport Fire Truck—Model MC-750—is such an important addition to airport fire protection equipment that you should have complete information. We'll be pleased to furnish it to you if you will write to us. Also note that the Model MC-750's unique combination of extinguishing performance and versatility suit it ideally to the needs of industrial plant fire protection.

CARDOX CORPORATION

BELL BUILDING • CHICAGO 1, ILLINOIS • District Offices in Principal Cities

NATIONAL FIRE PROTECTION ASSOCIATION
INTERNATIONAL

Invites you to enroll as a Fire Department Member



PERHAPS this is the first time that you have been informed of Fire Department Membership in the NFPA. Or, perhaps you are already one of more than 20,000 fire fighters who are receiving a subscription to FIREMEN through the membership of their departments. In either case, you are cordially invited to enroll as an Individual NFPA Fire Department Member during the coming year.

As a member of the uniformed fire service, your membership will cost $12.50 per year and will include subscriptions to FIREMEN, to the monthly *Fire News*, to the NFPA *Quarterly*, and also a number of important publications which are made available to members from time to time. You will also receive a handsome membership certificate, suitable for framing.

If your fire department enrolls as a unit, or if you are a fire chief, then SIX (6) subscriptions of FIREMEN will be included in the membership, together with the above publications, for the same $12.50. If you desire to have more than six subscriptions sent to your department, then additional subscriptions will cost $1.25 each.

NFPA Fire Department Membership is available to individuals in the uniformed fire service, to any paid, call, or volunteer fire department, and to industrial fire brigades. The "six-copy" plan of membership is available only to chiefs of fire departments and fire organizations as unit members.

Other members of NFPA may secure subscriptions to FIREMEN for $1.25 per year in addition to regular membership dues. Any additional subscriptions to FIREMEN also cost $1.25 per year.

Why not be well-informed during the coming year in matters pertaining to fire protection? Merely fill out the application blank below and mail it to the NATIONAL FIRE PROTECTION ASSOCIATION, 60 Batterymarch Street, Boston 10, Massachusetts. You will find NFPA Fire Department Membership an investment that will bring you authoritative information that you need to build a strong fire defense.

(See page 33 for other NFPA publications)

F-15

NATIONAL FIRE PROTECTION ASSOCIATION
60 Batterymarch Street, Boston 10, Mass., U.S.A.

Application for Fire Department Membership in NFPA

Please enroll .....
(Name of individual or organization, rank, title, or business connection)

Individual ☐
Paid Fire Department ☐
Call or Volunteer Department Company ☐
Industrial Fire Brigade ☐

City or Town..... **County**.....

Mailing Address .....

.....**State or Province**.....

Fire department organizations and chiefs of fire departments joining NFPA should send mailing list for 6 subscriptions to NFPA FIREMEN magazine. Additional subscriptions cost $1.25 each.

Enclosed $12.50 (Check or money order) ☐
Please send bill ☐

Firemen

Volume 18 — Number 9

WARREN Y. KIMBALL, EDITOR
PAUL R. LYONS, ASSOCIATE EDITOR
HENRY S. GERE, ADVERTISING MANAGER

Published monthly for the fire service members of the
NATIONAL FIRE PROTECTION ASSOCIATION

A VOLUNTARY NON-PROFIT ORGANIZATION
60 BATTERYMARCH ST., BOSTON 10, MASS.

PERCY BUGBEE, GENERAL MANAGER
CHARLES S. MORGAN, ASSISTANT GENERAL MANAGER
ROBERT S. MOULTON, TECHNICAL SECRETARY
HORATIO BOND, CHIEF ENGINEER

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Fire Apparatus Bottleneck

It is no longer possible for a fire department to place an order for a piece of fire apparatus and get it subject only to the ability of the manufacturer to make it.

Steel and certain other materials are insufficient for the U. S. rearmament program. The National Production Authority is allocating material to the fire apparatus industry based on requirements in a recent period of production. Orders for fire apparatus by the military services, far in excess of normal, are preempting some of the material which was originally laid aside for normal fire apparatus purchases. It is necessary to increase the material allocated, or the NPA measure, in effect, says to the cities that they cannot have a normal supply of fire apparatus.

As the situation stands now, the Office of Civilian Requirements of the U. S. Department of Commerce must pass on fire apparatus purchases. While that agency is earnestly anxious to help the municipal purchaser, its staff knows the limitations of material and tries to discourage a certain proportion of the purchases. The Office of Civilian Requirements has two choices in this matter: (1) to attempt, however inaccurately, to determine the relative importance of one purchase as against another, or (2) to approve all orders, up to the amount of material available, on a first come, first served, basis.

The latter appears to be the better of these two procedures. A rating plan of any kind could not be fair as criticality would be a matter of personal judgment and could be influenced by obsolete considerations of World War II. What areas are really critical? The cities? The industries? The rural fire districts? The forests? Who can exactly say?

A plan for rating the criticality of fire apparatus purchases would tend to almost completely discourage the purchase of municipal fire apparatus at the very time that such purchases should be encouraged. The extra paper work, phone calls, conferences with federal officials and other steps necessary would tremendously slow up the business of getting a piece of apparatus.

From the fire department point of view, it seems unfair for the federal government on the one hand to scold them for apathy toward civil defense and at the same time put obstacles in the way of cities which wish to keep their fire apparatus and equipment up to a standard such that the fire departments can be effective in civil defense. This is exactly the situation at the moment.

Has any one fire department a better right to fire apparatus than another? No one seems to have recognized the fact that any piece of fire apparatus purchased, no matter where it is delivered, would be available for civil defense purposes if needed. Such apparatus, if bought now, will be in the hands of some fire department which will give it care and attention so that it can be ready for use in emergency.

It is not helping the rearmament effort or our defense policy that this situation exists at the same time that the Federal Civil Defense Administration has a program before the Congress to buy 2,500 fire trucks. What happens now is that a municipality discovers that apparatus deliveries may be delayed because of limits of available material. The purchaser not located in an area considered critical by OCR is told that he probably cannot have the apparatus at all. If he is in an area he thinks is critical he may think that if he defers purchase he may eventually get some of the proposed civil defense equipment.

The immediate need is that additional material be allocated to the fire apparatus industry, particularly to take care of the orders from defense agencies. If this is done, the flow of fire apparatus to the municipal purchaser can resume at approximately its normal rate, especially if some system of criticality rating is not invoked to impede this flow.

Cover Photo

Fire fighters in Kansas City faced some difficult tasks during the recent flood that enveloped that city. This month's cover shows one of the situations encountered when a conflagration started at the height of the flood. A report on this fire may be found on page 11 of this issue of FIREMEN. Further details may be obtained from the NFPA Executive Office.

It's Your Fire Prevention Week!

OCTOBER 7-13, 1951

Fire Prevention Week is for YOU and YOUR DEPARTMENT. Make the most of it. Here is a summary of fire prevention activities undertaken by some organizations during the past year. Are YOU keeping pace with them?

WITH the arrival of Fire Prevention Week, October 7-13, 1951, fire departments and other members of the fire service will be bringing to a climax a wide variety of fire prevention programs. Since President Harding made the first official proclamation of Fire Prevention Week in 1922 there has developed an increasing appreciation in the fire service of the need for year-round fire prevention practices. The second week in October has become the time for the evaluation of programs of the past year and for the initiating of more ambitious activities for the coming year.

Since Fire Prevention Week of 1950 there have been a number of commendable year-long programs that have produced tangible results. First of these was the "Don't Gamble With Fire — The Odds Are Against You" program conducted by the Advertising Council. The National Fire Protection Association underwrote the cost of the materials necessary for this campaign, while through the Advertising Council every medium of communication was utilized including radio, television, newspapers, magazines, and many others. This program has had far-reaching effects and another one has already been planned for the coming year.

The U. S. Federal Civil Defense Agency is supporting the Fire Prevention Week Campaign this year. The program it recommends is to take advantage of the civil defense requirements that people in homes clean up the premises, get rid of combustible rubbish, and learn how to use simple fire-fighting tools as a measure of civil defense.

The International Association of Fire Chiefs launched a full-scale, year-round fire prevention program in June (see FIREMEN for February and July, 1951) designed to save the lives of 4000 children from fire. According to Chief Jay W. Stevens, Secretary of the IAFC, there has been an encouraging response from chiefs throughout the country. The campaign is being supported by the sale of "Baby Bonds" by fire departments pledging support. Each month the chiefs have a schedule of contacts to be made among schools, clubs, business establishments and other organizations with the purpose of cultivating good fire prevention and fire protection practices. The program is designed to extend for a full year and with nation-wide cooperation of all fire departments should produce commendable results.

Two examples of the type of activity that this program has initiated come from the Bureau of Fire, Portland, Oregon, and from the Berkeley, California, Fire Department. In Portland, members of the Bureau of Fire, under Chief Edward Grenfell, recently began a dwelling inspection program that will cover 92,000 homes in that city. The inspecting teams use a small correction slip shown on this page to notify the home owners of hazardous conditions that exist and need remedy.

Members of the Berkeley Fire Department, under Chief William Meinheit (member NFPA), are making personal calls at each home in that city and are presenting a letter that outlines the aims and importance of the building inspection program. The letter outlines the IAFC's Fire Prevention Program and for emphasis carries a complete list of the names of the nationally known persons headed by former President Herbert Hoover who are members of the Fire Prevention Committee of the IAFC. It is a polite invitation to the home owner to make use of the knowledge of Berkeley Fire Department members in eliminating hazardous conditions.

The Fire Department of Columbia, South Carolina (State Capital with a population of 86,000), headed by Chief A. McMarsh (member NFPA) conducts an annual program of building inspections by fire company members in their respective districts. Each of the three fire stations has a pumper equipped with three way radio. The entire company proceeds with the radio equipped apparatus to the location selected for inspection. The apparatus is parked with the pump operator in charge. The remainder of the company inspect a building keeping in touch with their apparatus by a 3-way radio hand set. Notes are taken regarding features of importance in fire fighting such as sprinkler systems. These fire company inspections are in addition to those made by the six-man fire pre-

(*Please turn to page 34*)

CITY OF PORTLAND, ORE.
Bureau of Fire

DWELLING INSPECTION

ADDRESS_____

The Portland Fire Department requests your cooperation in making YOUR home safer from fire by correcting the following hazards:

- ☐ Rubbish not properly taken care of
- ☐ Ashes not in metal containers
- ☐ Oily rags/mops not in metal container
- ☐ Flammable Liquids not properly stored
- ☐ Stoves not properly installed
- ☐ Stove pipe not properly installed
- ☐ Defective Flue or Flue Stops
- ☐ Combustibles too close to Stove/Furnace
- ☐ Fuse Box overfused
- ☐ Defective Wiring

Remarks:_____

KNOW WHAT TO DO IN CASE OF FIRE IN YOUR HOME

1. Plan your escape route from your home. NOW!
2. Know the telephone number of the Fire Department (EA 2111) and the location of your nearest Fire Alarm Box.

Think—Prevent Fires

Three (3) out of every 4 dwelling fires in Portland are caused by heating systems and chimneys. Have yours cleaned and serviced annually.

For additional information call:
AT 6141 — EXT. 31; OR
EA 8135

EDW. GRENFELL
Chief

Members of the Portland, Oregon, Bureau of Fire use this blank when making a dwelling inspection.

Flaming Oil on Kansas City Waters

THE picture above illustrates the difficult fire fighting conditions that existed during the recent flood at Kansas City, Missouri, when a conflagration developed during the flood and involved numerous mercantile and industrial buildings, lumber yards, and oil storage tanks.

An area in the southwestern portion of the city near the boundary line of Missouri and Kansas had become inundated to an average depth of 13 feet. On the afternoon of July 13, a 6,000 gallon fuel oil tank on the property of the Phillips Petroleum Company in this area floated against a high tension power line, caught fire and exploded, then floated across a street against an office building of the Socony Vacuum Oil Company and set it afire.

An alarm was transmitted to the Kansas City, Missouri, Fire Department and when the first apparatus arrived additional alarms were transmitted for all possible aid since the fire was beyond immediate control.

THE seat of the rapidly burning oil slick was at least 200 feet distant from dry land. The only points of vantage for fire fighters were the tops of the buildings. Small boats and rafts were used for the transportation of lines, nozzles, and other equipment and many times fire fighters had to swim in order to stretch the lines from building to building.

Water pressure in the city mains was very low since the Turkey Creek pumping station, which supplied two-thirds of the normal demand, had been inundated. Pumpers had to be maneuvered as close as possible to the edge of the waters and a total of 500 feet of 5-in. and 6-in. hard suction was used by the Kansas City, Missouri, Fire Department for drafting operations.

Altogether there were 300 fire fighters on continuous duty and the Department used 23 pumpers plus 2 OCD pumps, 5 aerial ladders, 3,000 ft. of ¾-in. hose, 10,000 ft. of 1½-in. hose, and 35,000 ft. of 2½-in. hose.

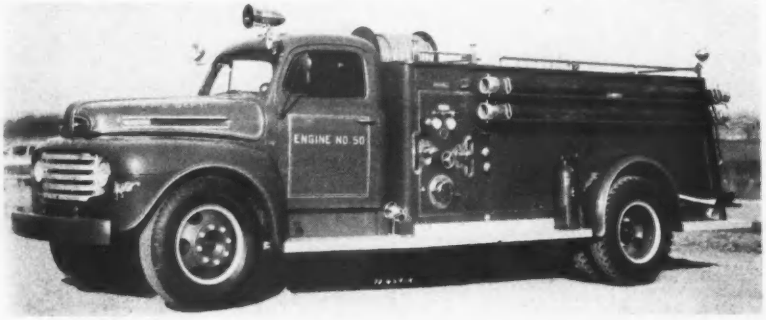
OTHER oil companies and bulk plants in the vicinity became involved in the fire. During the next four days a number of tanks containing various grades of fuel oil, naphtha, and gasoline exploded or

(*Please turn to page 40*)

Horizontal and vertical tanks varying in capacity from 12,000 to 340,000 gallons were lifted from their foundations by the flood or destroyed by fire and spread gasoline, naphtha and various grades of fuel oil. Drifting pieces of burning lumber caused re-ignition many times when the fire appeared to be under control.

Latest Suburban and

ON these pages we present a selection of photographs of the latest in suburban and rural fire trucks by 22 American manufacturers and assemblers of such equipment who furnished photographs upon invitation by the Editors of FIREMEN. These pictures for the most part show units assembled on various commercial truck chassis as supplied to most rural departments. Heavy duty pumpers, pumper-ladder combinations, aerial ladders, and special duty apparatus by the various manufacturers will be shown in subsequent issues of FIREMEN. Obviously, it is impossible in limited space to call attention to all of the interesting features of each truck.



American-LaFrance-Foamite Corporation, Elmira, New York

500 gpm ball bearing pump, exhaust ejector primer.
500-gallon tank, rear fill.
Ford F-7, 178-in. wheelbase chassis.
1600 ft. 2½-in. hose, 400 ft. 1½-in. hose, 2 booster reels.
Large rear compartments for portable pump and generator and closed compartment over pump.

The Autocar Company, Ardmore, Pennsylvania

600 gpm Hale 3-stage high pressure pump.
400-gallon tank.
193-in. wheelbase Autocar chassis.
Dual booster reels with Hardie fog guns.
Floodlights.
(Equipment installed by Boyer Fire Apparatus Company, Logansport, Indiana.)

John Bean Division, Food Machinery and Chemical Corporation, Lansing, Michigan

John Bean fog fire fighter with Royal piston pump giving 60 gpm at 850 lbs. pump pressure.
450- or 600-gallon tank.
Ford F-7 chassis.
Two reels of high pressure hose with fog guns.
Pump can be operated with truck in motion.

The Boardman Company, Oklahoma City, Oklahoma

500 gpm pump.
Large booster tank.
Ford F-7 chassis.
Dual booster reels with fog nozzles.

Rural Fire Apparatus

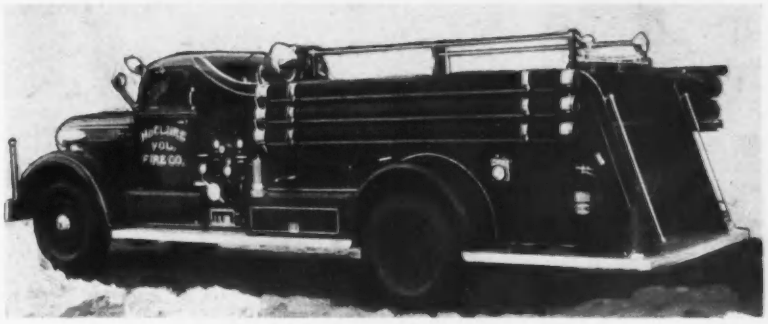
We have attempted to give the essential data about each unit presented in a uniform style indicating size of pump, water tank capacity, chassis, and special features that might be of interest. In many cases it was difficult to select a single unit for presentation from a number of attractive trucks presented for consideration.

Boyer Fire Apparatus Co.,
Logansport, Indiana

500 gpm Hale pump.
1000-gallon tank.
GMC chassis, 197-in. wheelbase.
Carries large assortment of ladders.

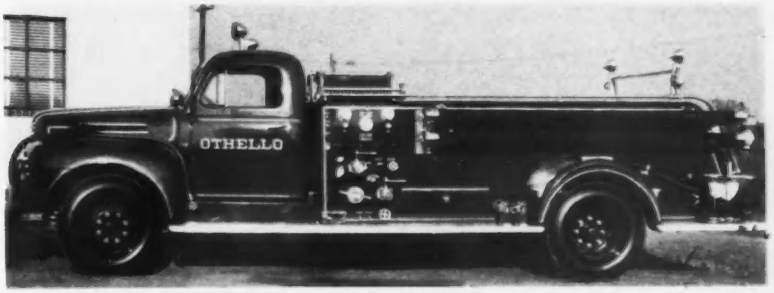
Brumbaugh Body Co.,
Altoona, Pennsylvania

Hale pump.
Large water tank.
Diamond T chassis.



Coast Manufacturers,
Concord, California

600 gpm Waterous pump, plus Hale FZZ portable pump.
500-gallon galvanized tank.
Ford F-7 chassis, 177-in. wheelbase.
1000 ft. 2½-in., 400 ft. 1½-in. hose, two 250 ft. hose reels.
Fender seats in front with two short "jump lines" with fog guns.

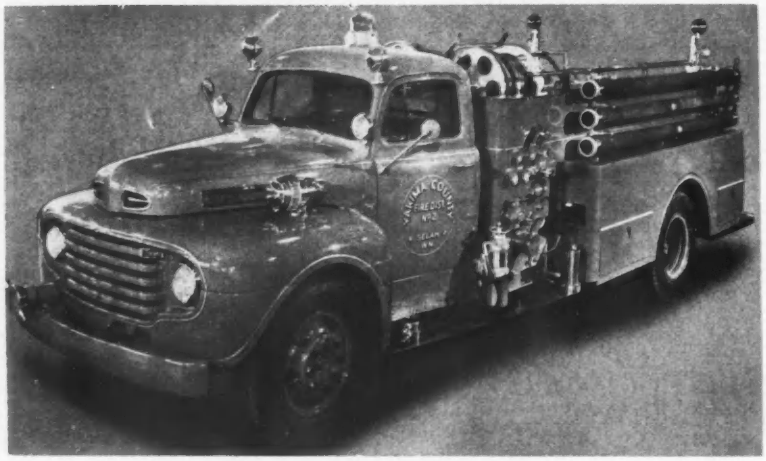


Dakota Fire Apparatus Company,
Sioux Falls, South Dakota

200 gpm Hale power take-off rotary pump mounted cross chassis with two 2½-in. discharge valves.
300-gallon baffled tank with large rear fill.
Ford or other "1½- or 2-ton" chassis.
Combination fog-straight stream booster nozzle.
Extra suction hose.
Overhead aluminum ladders.

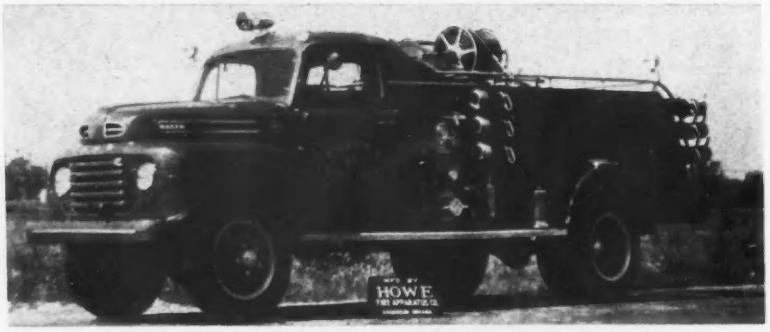
W. S. Darley & Co.,
Chicago, Illinois

500 gpm Champion 3-stage high pressure pump.
500-gallon flat tank with quick action rear fill and electrical gage showing water supply.
Ford F-7 chassis.
2 reels of high pressure hose.
Large ¼-turn 4-in. valve on pump intake to permit in-line operation with pump running.
Equipment compartments over pump and at rear.



Howard-Cooper Corporation,
Portland, Oregon

500 gpm Hale 3-stage high pressure pump.
800-gallon tank.
Ford F-7 chassis.
Two booster reels.
Front suction connection.



Howe Fire Apparatus Company,
Anderson, Indiana

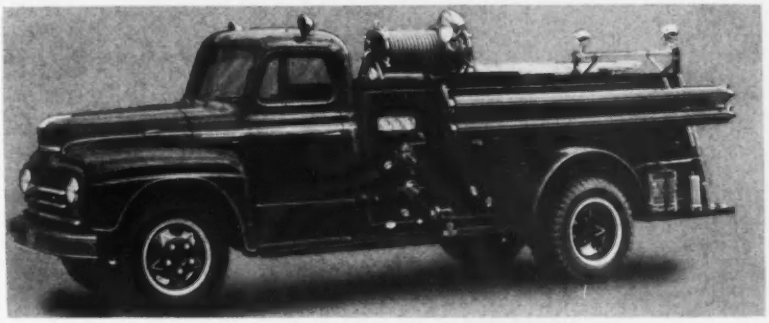
500 gpm pump.
Booster tank with dual reels with fog guns.
Ford F-5 chassis with Marmon-Harrington 4-wheel drive conversion.
Streamlined body and chrome plated hose reels.

Kenworth Motor Truck Corporation,
Seattle, Washington

750 gpm pump.
500-gallon tank.
245 hp. engine, air brakes.

Luverne Fire Apparatus Company,
Luverne, Minnesota

500 gpm pump.
Large booster tank.
International chassis.



Mack Manufacturing Corporation,
Long Island City, New York

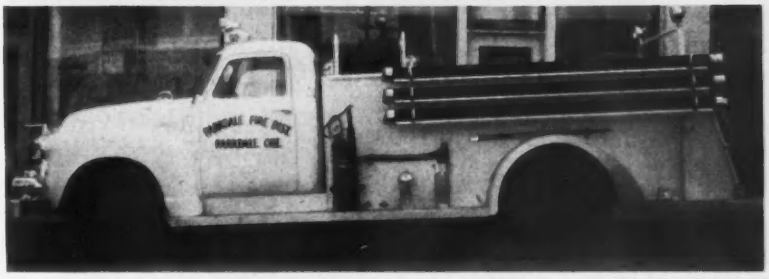
500 gpm pump.
300-gallon flat water tank.
Mack Type 45A chassis, dual ignition.
Two body partitions, 1½-in. rear discharge.
Foam and wet water proportioner.

Maxim Motor Company
Middlebore, Massachusetts

500 gpm pump.
500-gallon tank.
Ford F-7 chassis with Maxim X50 equipment.
Dual hose reels, extra suction hose.
Special compartments at side of body.
Overhead ladders.

The Neep Equipment Company,
Portland, Oregon

Barton American Marsh U-50 500 gpm pump.
600-gallon flat tank, 10 gage steel
GMC chassis.
Dual booster reels with Hardie nozzles.



Oren Roanoke Corporation
Roanoke, Virginia

500 gpm 3-stage Hale high pressure pump.
600-gallon tank.
Ford F-6 chassis.
2 reels with fog guns and rear 1½-in discharge connections.

Peter Pirsch & Sons Co.,
Kenosha, Wisconsin

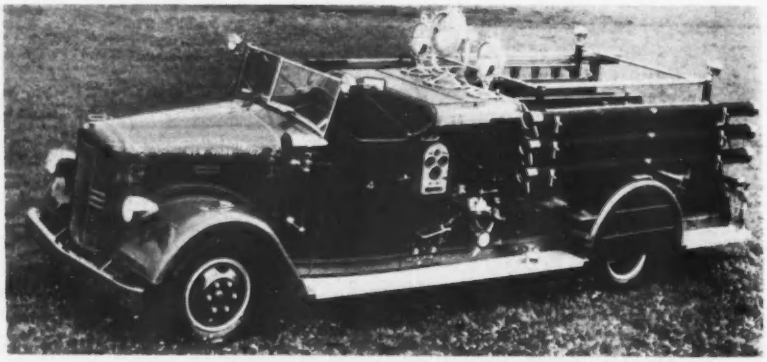
Rural tanker with enclosed compartments for pump, ladders, and appliances. Booster reel at back. Note 2½-in. discharge gate which can supply another truck.
Chassis, International truck with tandem rear axle.

Seagrave Corporation,
Columbus, Ohio

500 gpm Seagrave pump.
Booster tank with two reels.
Ford F-7 chassis.

P. E. Van Pelt, Inc.,
Oakdale, California

600 gpm Hale 3-stage high pressure pump, plus 100 gpm Hale power take-off pump.
500-gallon tank.
1000 ft. 2½-in. hose, elevated basket for 500 ft. 1½-in. hose, two booster reels.
20 ft. "squirrel tail" suction permanently connected to main pump in addition to standard suction hose.
Rear step windeshield.



Ward LaFrance Truck Corporation
Elmira, New York

500 gpm pump.
Divided hose body, additional suction hose, and floodlights as special equipment.

Young Fire Equipment Corporation,
Buffalo, New York

500 gpm Hale 3-stage high pressure pump.
500-gallon tank.
International chassis.
1000 ft. 2½-in., 500 ft. 1½-in. hose, and two booster reels.
Deluxe compartment type body.

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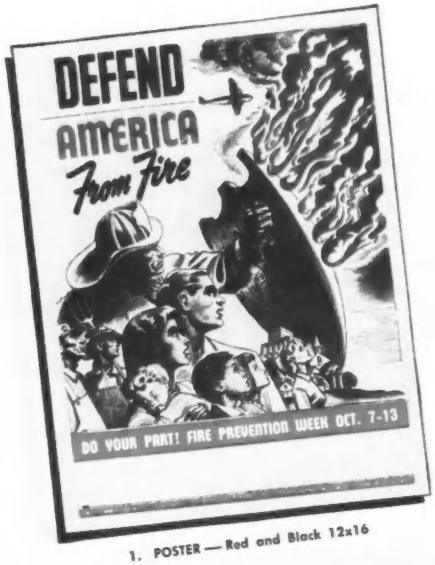
October 7 - 13, 1951

Use Order Coupon on opposite page



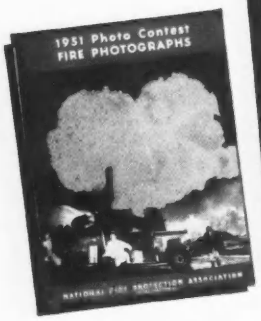
1. POSTER — Red and Black 12x16

2. "FACTS ABOUT FIRE" 8½x11
4 pg. rotogravure
pictorial fact sheet

3. DISPLAY CARD 12x16
2 color die-cut
Reproduction of Poster

6. STICKER 1½x1⅛
Perforated — Reproduction
of Poster — Use on outgoing
correspondence, packages, etc.

7. FLYER — Two colors 5½x8½
Useful envelope stuffer



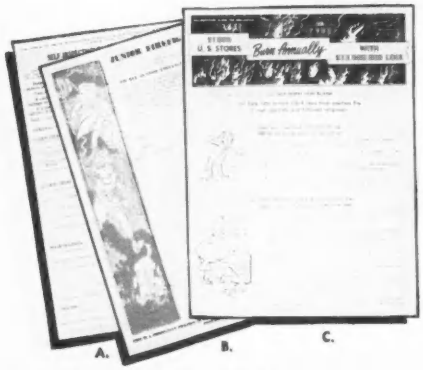
4. 1951 PHOTO CONTEST 7x9¼
FIRE PHOTOGRAPHS
Best pictures submitted in First
Fire Photo of Year Contest

(a) (b)

5. FIRE COMIC BOOKS 7½x10
(a) 16 pages — Full color — A story
of a typical family's experience
with fire.
(b) 16 pages — Full color — Story
of Major North American
Conflagrations.

8. PICTURE BOOK — Red and Black
16 pages of outline drawings
of fire hazards for coloring
by children. 7x10

9. PLASTER — Red and Black 3½x12 — For posting
on store windows, billboards, vehicles, etc.



A. B. C.

10. INSPECTION BLANKS — 8½x11
A. Self-inspection form for Industrial Plants (one color)
B. Junior Firefighters Report (two colors)
Home inspection blank for school distribution
C. Self-inspection blank for Merchants (one color)

(a) (b) (c) (d) (e)

11. FOLDERS — In several colors 6¼x3¼
For including in letters, home distribution, etc.

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Order Your Fire Prevention Material Early

IN order to forestall transportation delays it is important that your order for the fire prevention material shown on the opposite page be received in the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts, not later than September 24, 1951. For your convenience a handy order blank appears on this page. To expedite your order for this material, merely indicate the quantity of each type of material that you desire and forward the blank, together with your name and address, to the NFPA Executive Office.

Prices are subject to two per cent discount if payment for the material accompanies your order. All prices are F.O.B. Boston, and orders are shipped express collect.

NFPA members may receive a single copy of all items without charge. Others may receive a sample of all items except the "Handbook" and the Display Card (Item 3) free upon request.

Order Blank

Quantity

..... 1. Poster — $2.50 per 100, $17.50 per 1000.

..... 2. Facts About Fire — $2.00 per 100, $15.00 per 1000.

..... 3. Display Card — 25c each, discount for quantities.

..... 4. Fire Photo Book — $1.00 per copy; 25 copies, 10% discount; 250 copies, 25%; 2500 copies, 33⅓%.

..... 5. Comic Books — 5c each, $45.00 per 1000.
..... (a) Fire.
..... (b) America in Flames.

..... 6. Sticker — 15c for sheet of 50, discount for quantities.

..... 7. Flyer — $1.00 per 100, $7.00 per 1000.

Quantity

..... 8. Picture Book — 5c each, $5.00 per 100, $45.00 per 1000.

..... 9. Plaster — $1.00 per 100, $6.00 per 1000.

..... 10. (a) Industrial — $1.00 per 100, $7.50 per 1000.
..... (b) Home Inspection Blank $1.00 per 100, $7.50 per 1000.
..... (c) Mercantile — $1.00 per 100, $7.50 per 1000.

..... 11. (a) Folder — $2.00 per 100, $17.50 per 1000.
..... (b) Folder — $2.00 per 100, $17.50 per 1000.
..... (c) Folder — $2.00 per 100, $17.50 per 1000.
..... (c) Folder — $2.00 per 100, $17.50 per 1000.
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..... Firerule — slide rule which reveals fire causes, proper prevention, etc., 3¾ in. x 8 in. red and black. 3c each, $3.00 per 100, $25.00 per 1000.

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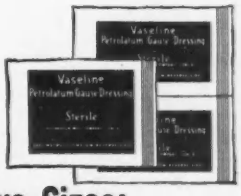
Cover damaged surface and area two inches beyond with two layers or more of petrolatum gauze dressing . . . then apply sterile dry bandage to keep clean and hold gently in place—using first-aid principles . . . have injury examined by a physician.



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Your Aviation Fire Problem

By George H. Tryon, III, Assistant Technical Secretary of the National Fire Protection Association,
Secretary of the NFPA Committee on Aviation and Airport Fire Protection

"The public is more and more associating fire as the inevitable result of aircraft accidents and the fear of such results is becoming more and more poignant. To eliminate or reduce the incident of fire should be the principal aim of aircraft design engineers and research groups — to eliminate or reduce the serious results of fires that do occur should be the principal aim of aircraft operators, airport managers and fire officials."

From NFPA Special Aircraft Accident Bulletin, Series 1950: No. 7

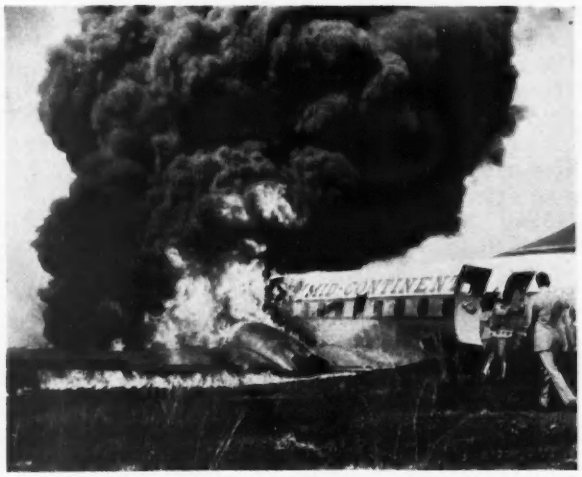
THE above quote indicates the scope of the aviation fire problem. Obviously you cannot do much about the inherent fire vulnerability of the modern aircraft — that must be left to the aeronautical engineers. It is pleasing to report that the magnitude of this aircraft design fire problem has now attracted the attention of top governmental and industry people and as each new aircraft comes off the drawing boards, new fire safety advances are being incorporated. However, it is also true that new fire problems are simultaneously being encountered with jets and rocket propelled air supported vehicles.

Our concern is with aircraft taking-off, flying, landing, and sometimes, crashing, at our airports, in our towns, or possibly 10 miles from the nearest hydrant. Our concern is to save life; to somehow extricate occupants of crashed aircraft before fire destroys them.

Let's not kid ourselves. Aviation researchers have determined that two to three times as many people are killed in accidents followed by fire in aircraft than are killed when no fire follows the accident. The question is, what can we do about it?

FIRST of all, we should recognize that basic fire extinguishment principles apply. No new basic formulas are required. Cooling, smothering, and limitation of fire areas are as fundamental in aircraft fire fighting as in structural fire fighting. The difference comes in the application technique. This demands special facilities in terms of equipment and special knowledge on the part of the fire fighter.

Largest post-war foam trucks built for civilian airport use are those now in service at the Port of New York Authority airports. Built on Walter Motor Truck Company chassis by Maxim Motor Company, the trucks have a gross weight of 40,000 lbs. and use 16.00 x 24 tires (40 lbs. pressure). Fog-foam is the principal extinguishing agent used but 800 lbs. of CO_2 is also available.



This Mid-Continent plane burned to destruction on the Tulsa Municipal Airport on February 27, 1951. The one crash truck available bogged down in soft ground 900 ft. from the accident site. The unit was a "Class 125" Army truck furnished by the National Guard located at the airport. City equipment responded from their nearest station 3½ miles away but was not used because of its delayed arrival and the soft ground conditions. All occupants escaped.

Most students of aircraft rescue and fire fighting concur that the chief purpose of providing rescue and fire fighting equipment at airports is to save the lives of passengers and crew. However, it is most often necessary, particularly in transport category aircraft, to effect complete control or extinguishment of fire to ensure such rescue. The question remains as to just how possible of attainment is this extinguishment? The answer is that it is possible, in the cases we can reach in time.

The limiting factor will always be the location of the accident. We could not expect to be effective when the accident site is remote from our base of operations — as on a mountain top. If we are willing to consider our airport as the focal point of our aircraft fire defense, however, almost forty per cent of the accidents will happen within five miles of us. With the proper facilities we *can* do something within this range.

IT is logical to consider our airport as the center of our aircraft fire defense because it is here that the accident potential is greatest. This is because on the movement areas of airports and in the air space surrounding it, there is the greatest concentration of air traffic and the greatest air navigation hazards. Not all cities have recognized this fact, but a survey by the NFPA, conducted earlier this year and reported in NFPA Aviation Bulletin No. 65, shows that 53 of the 64 largest airports in the U. S. serving cities of 150,000 population or more, have at least one crash rescue fire truck stationed at the airport.

But, "at least one crash truck" conceals the real fact that a vast majority of these vehicles are totally unequal to the task of successfully coping with the real thing. Less than a dozen airports in the U. S. serving commercial, rather than military aircraft, come near to having adequate rescue and fire fighting equipment.

Here are some cardinal principles, all of which are spelled out in greater detail in NFPA Pamphlet No. 403 entitled: "Suggested Aircraft Rescue and Fire Fighting Equipment for Airports" (50¢ a copy).

You determine what equipment you need by knowing the type of aircraft utilizing your airport. This can be conveniently done by knowing the gross weight of the largest individual aircraft normally operating at your facility. The fuel capacity of this aircraft and the number of occupants the aircraft can carry will be relative to this weight. The number of aircraft operations per day does not influence the degree of protection required although it may affect the number and assignment of personnel needed to man the equipment.

You evaluate the type of extinguishing agents you require by recognizing the nature of the hazard. You know what you can and can't do with water, foam, "fog-foam," carbon dioxide, and dry chemical on large, outdoor gasoline-type fires. The decision you must reach is that no single agent, available today, has all the necessary qualifications for speedy and permanent aircraft fire extinguishment.

The answer lies in what is called "the combined agent" technique. Studies of successful aircraft rescue and fire fighting activities over the past decade have proved that the combined use of carbon dioxide and foam (with option to "fog-foam" or water spray) is most effective.

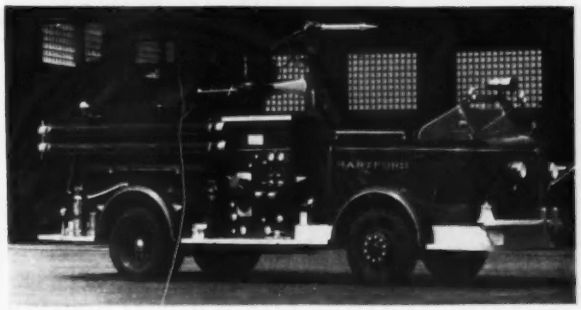
The amounts of these agents required and the discharge rates recommended are, at first glance, staggering, but unless these amounts are available and are discharged within the time limit established, the equipment is not an asset. For instance, if your airport accommodates four-engine aircraft, like the Douglas DC-6, the Lockheed "Constellation," or the Boeing "Stratocruiser," the minimum quantities of the two agents you need is 3,500 gals. of water (for foam production) and 4,000 lbs. of carbon dioxide, or, optionally, 4,500 gals. of water (for foam production) and 2,000 lbs. of carbon dioxide. If your airport accommodates, at best, a two-engine aircraft, like the Convair 240, the new Douglas Super DC-3 or the Martin 202 (aircraft weighing from

A 1949 survey of airport crash fire protection at Philadelphia revealed some weaknesses in their set-up. When this accident happened in January of this year, firemen were all but helpless to rescue seven of the twenty-eight occupants in the burning aircraft although they did the best they could with the adverse situation confronting them.

26,000 to 50,000 lbs., carrying 1,000 to 2,000 gallons of gasoline, and accommodating 25 to 40 people), your minimum would be 1,500 gals. of water (for foam production) and 2,000 lbs. of carbon dioxide. Furthermore, regardless of the amount, you must have facilities to discharge these minimum amounts of agents within 2½ minutes on the fire. This normally means at least one turret and two large capacity hand lines, possibly augmented by a ground sweep nozzle mounted under the front bumper.

Yes, these are tough requirements. Yes, these requirements spell special equipment. But, you have before you in an aircraft crash fire ample justificaton for these requirements. You can't kid yourself that any war surplus crash truck having a 200 or 300 gallon water tank and two or three 1½-in. hose lines will do the job. You would need a number of such units and manpower enough to man each to produce the required discharge rates, and, even then, you may be licked if you don't have the CO_2 available for the bulk discharge. Planes of today, in the size we are speaking, just won't burn that slowly.

You have a lot of agent to get to the fire and, unless you are awfully lucky, you may have to transport it some distance to the fire. When you are doing this transport job, you can't linger, either. This indicates a number of things. First, the amount of agent you carry on a single vehicle must not prejudice the performance characteristics of that vehicle. In other words, don't overload! Have multiple units rather than overload one unit. Second, this vehicle (or those vehicles) must have a cruising speed of at least 50 mph on paved roads, and be capable of accelerating to this speed within 45 seconds, or in a distance of 1,400 ft., without engine



Hartford's Brainard Field has this American-LaFrance-Foamite crash truck located within a mile of the airport. The vehicle has a 500-gallon water tank and 300 lbs. of CO_2 and was designed especially for use on all types of flammable liquid fires. The turret can discharge 190 gpm through its 5/8-inch tip.

Fog-foam received its first aircraft use in the Fire Appliance Co. unit built for the Navy and designated the FFN-5. It is used today on several civilian airports which are also locations for Naval Air Stations. Note the throw of the turret and the ground sweep foam nozzles.

The Seattle-Tacoma Airport has recently put in service this Kenworth Motor Truck Corporation crash unit. The 30,000 lb. gross weight vehicle is a 6 x 4 and has a 245 horsepower (at 2200 rpm) Hall-Scott motor. It carries a 750-gallon water tank, a 68-gallon liquid foam tank, 300 pounds of dry chemical and ten gallons of wet water. Two pumps are provided, a Hale with a capacity of 600 gpm at 150 psi and a Bean with a capacity of 60 gpm at 800 psi.

preheating. Third, your tires must be able to provide vehicle flotation and traction on soft soil as well as on concrete. To secure optimum benefits your tire pressures should be 25 psi and the load per tire should not exceed the official Tire and Rim Association Standards for Aircraft Rescue and Fire Fighting Equipment as published in NFPA Pamphlet No. 403.

NFPA personnel recommendations are designed so that the principal aircraft rescue and fire fighting vehicle available can be fully manned within 30 seconds of an alarm and that each additional unit of equipment has a driver available within the same time. Auxiliary personnel are recommended to complete the manning of such equipment and this should be at least adequate to assure the total discharge of all agents within the 2½ minutes maximum discharge time. Such personnel must be highly trained and possess expert knowledge of:

The capabilities and limitations of their rescue and fire fighting equipment,

The standard operating procedures for aircraft rescue and fire fighting as set forth in NFPA Pamphlet No. 402,

The physical features of aircraft operating on the airport, particularly its entry and exit facilities, fuel systems, battery locations, oil tanks, heater locations, etc.,

The behavior of fuel vapors and flammable liquids under conditions encountered in aircraft accidents,

Methods of preventing fire following aircraft accidents where fire does not initially occur,

First aid and methods of handling injured persons to avoid inflicting additional suffering or injury in extricating them from crashed aircraft, and

The flight patterns at the airport and operational practices in the airport airspace, including knowledge of ground flight obstructions and airport topography.

Chicago Municipal (Midway Airport) boasts this post-war design of the Cardox crash truck made famous during World War II by the Air Force. It has 4,000 lbs. of CO_2 which can be discharged at over 3,000 lbs. per minute and 230 gallons of mechanical foam solution.

This Kidde Co. crash truck has 1,200 lbs. of CO_2 and 1,000 gals. of water for use with foam. It conforms to NFPA extinguishing agent minimum recommendations, therefore, for aircraft in the 15,000-26,000 lbs. gross weight catagory (the old DC-3, Lockheed Lodestar, types). Multiple units would be needed for larger aircraft.

REACHING this status costs money, takes time to realize and will probably produce many arguments as to who should pay, who should administer. The cost question has been kicked around seriously at many airports and our survey shows that the solutions found depend heavily upon who operates the airport. It is particularly interesting, in this connection, to note that for 22 of the 64 main city airports surveyed, the city itself bears no financial burden. This is true, despite the fact that each of these airports owes its very existence to its proximity to the city. Sometimes the airport is operated by the county government, sometimes by the U.S.A.F., sometimes by the Navy, by the Air National Guard or by the Air Reserve, and, in three cases, its the State's budget which is nicked. Uncle Sam himself pays at Washington and at some of our outlying Pacific bases serving commercial airlines. Only in two cases do the airlines or other airport users contribute directly to this fire defense. But, the point is, the problem can be solved and you, as a member of the fire service, are the one to start finding the solution in your town today.

The protection of air passengers and crews from intense and fast burning crash fires presents a new challenge in preparedness, skill, and stamina. Singed wings can't fly and fire is the greatest threat to the lives of those who do fly. Let's make our airport fire devenses adequate now. It may be much too late tomorrow.

"Fighting for the heavyweight championship of the world — — And there goes the bell for the first round."

Operating Fire Department Pumpers

This is the fourth in a series of articles on pumper operation taken from the report of a subcommittee of the NFPA Committee on Firemen's Training. This material was developed at a conference held at St. Joseph, Missouri, last fall, with the following group participating: Robert C. Byrus, Director, Fire Service Extension, University of Maryland; Joseph I. Fetters, Nebraska Department of Education; Keith Royer, University of Kansas; Bush Walden, University of Missouri; Emmett T. Cox, Western Actuarial Bureau; Warren Y. Kimball, NFPA FIREMEN Magazine; Battalion Chief Alfred M. Grunwell; Lieutenant A. M. Peel, and Sergeant L. N. Balcom of the Washington, D. C., Fire Department.

Operating from Hydrant

FIRE hydrants must always be opened fully on every occasion. If a hydrant be only partially opened, the drain valve in the bottom of the barrel will not close. This permits water under pressure to escape through this valve. This escaping jet of water can wash away all the earth from around the hydrant barrel and cause it to break from the main. In addition there is the problem of freezing in winter. Some hydrants are so constructed that they open very little the first few turns as compared to the last few turns. The fact that a hydrant is not fully opened may not be readily apparent until it is desired to utilize the full capacity of the pump.

Suction hose between the hydrant and the pump should be kept reasonably straight with no sharp bends or kinks to restrict the flow.

A practice worthy of consideration is to place a "gate" valve on the outlet of the hydrant not being used before the water is turned on. This permits another pumper to make connection or permits a second supply line to the first pumper without shutting the hydrant off. The amount of water available from each hydrant may be a determining factor affecting adoption of this policy.

Whenever an option exists as to which side of the pumper the suction hose connection will be made to the pump intake, it is recommended that the connection be made on the side of the pump from which the controls are operated. This will permit the operator to observe the suction hose for signs of collapse indicating that all available water is being used.

Drafting

WHEN water is to be drafted from a source below the level of the pump the motor is called on to perform the jobs of lifting the water from the source of supply up to the pump intake, and also to supply the required force to send the quantity of water being pumped to wherever it is needed for fire fighting. This twofold task on the part of the pumper means the pump operator must be well versed in the ways and means of getting the most efficient operation possible from his pump.

When drafting water the following general precautions and hints should be given consideration:

The pumper should be placed on level and solid ground that will bear the weight of the pumper under conditions of considerable vibration.

A hard suction hose must be used. This should be kept as short as possible provided that the strainer is adequately immersed. It is important to remember that the size and length of suction hose are limiting factors in the amount of water that can be drafted and the height to which it can be lifted.

THE distance from the surface of the water to the pump intake should be as small as possible. Lifts of over 10 feet increase the load on the pump and motor. In some instances where the pumper cannot be placed close to the water's edge it is possible to draft some water through a long horizontal suction but with decreased efficiency due to increased friction loss. In fact some pumpers carry extra lengths of hard suction hose for this purpose. Experience gained by pumping from local sources of water supply will indicate to pump operators exactly what may be expected from his pump under the conditions existing locally

All suction hose connections must be absolutely air tight. Gaskets must be new and fresh to assure perfect seat between the male and female couplings.

When drafting from open water supplies it may be necessary to connect the suction hose before the pumper takes final position and "inch" or "wrestle" the hose into position as the pumper moves forward.

Always use an adequate strainer on the immersed end of the suction hose. Also check the strainer in the pump intake before connecting suction hose to be sure it is unobstructed.

The end of the suction hose should be kept off the bottom to avoid sucking grit and abrasive material into the pump and to avoid blocking the end of the suction hose with mud. While such matter if of small size may pass through a centrifugal pump it will nevertheless damage the close fit between the impellers and the pump housing and hinder the pump's ability to produce high pressure. A rope attached to the end of the suction hose may be tied to any substantial object to keep the suction off the bottom. The strainer can also be laid on a salvage cover in shallow water for this purpose.

THE end of the suction strainer should be submerged at least two feet below the water level to prevent the formation of a whirlpool that permits air to enter the end of the suction hose. Whirlpools can be prevented by placing a baffle at the water surface, or by digging a depression in the bottom of the water source so the end of the suction can be placed lower below the surface. Baffles can be improvised from metal signs, wood doors, salvage covers, or similar objects.

When drafting from a small flowing stream the water depth can be increased by making a dam. It may be practical to use a ladder and a salvage cover for this purpose.

Pay particular attention to the submerged end of the suction hose to keep it clear of floating debris and foreign matter that could cause an obstruction. It may be possible to use a jet of water from the booster lines to keep the suction strainer clear by driving floating debris away.

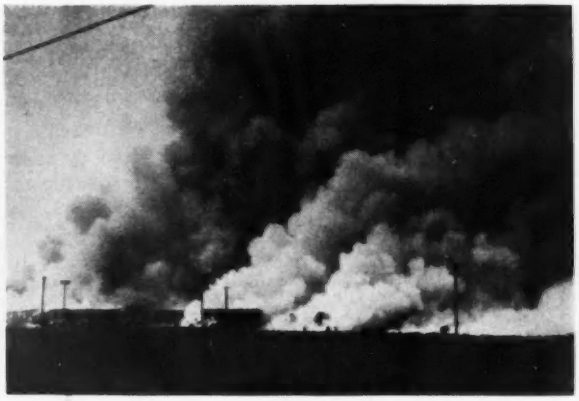
(Watch for a continuation of this important series on Pump Operation in future issues of FIREMEN *— Ed.)*

FIRES IN THE NEWS

City Island Yacht Basin, Bronx, New York. July 12 (New York Daily Mirror Photo). An explosion in a pleasure craft undergoing repairs started a fire that eventually involved other craft and the yards of the adjacent Consolidated Shipbuilding Corporation. 16 engine companies, 4 ladder companies, and other special units responded and used 4 deck pipe streams and 19 hand lines. A strong wind hindered exposure protection operations and preliminary estimate of loss was in the vicinity of $1,000,000.

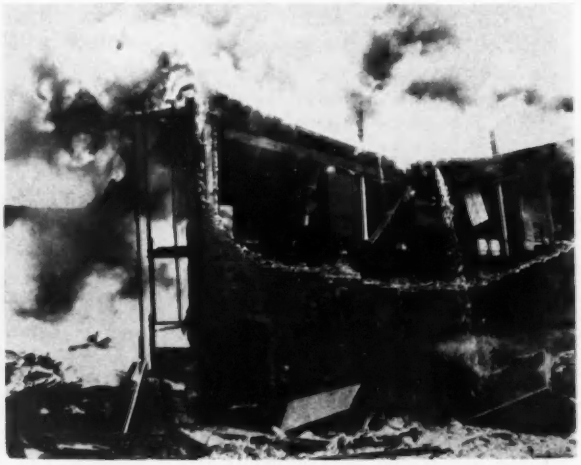
P & C Food Warehouse, Syracuse, New York. July 16 (World Wide Photo). A passerby discovered fire in this building in the early morning hours and promptly telephoned the Syracuse Fire Department. Upon arrival of apparatus, however, the building was completely involved. 11 engine companies, 3 ladder companies, and a squad company surrounded the fire using 16 2½-in. lines, 2 1½-in. lines, and a booster line, but preliminary estimates of the loss were greater than $500,000.

Bozeman Livestock Yards, Bozeman, Montana. July 18. Although more than 100 people were in this building when fire started, it was discovered by a housewife in her home across the street. A strong wind made exposure protection difficult. Three 2½-in. lines and two 1½-in. lines were used to cut off the fire on the main barn. Everyone was evacuated safely from the building and loss was confined to approximately $11,000.



Chilean Nitrate Sales Corporation, Norfolk, Virginia. June 4 (Associated Press Wirephoto). Prompt notification of the fire department helped to save surrounding property when fire started in this warehouse containing more than 6,000 tons of nitrate of soda, but the 130 x 502-foot warehouses was not subdivided and was practically destroyed in about thirty minutes. Access was difficult for fire fighters and loss was estimated to be in excess of $400,000.

Allison Division, General Motors Corporation, Indianapolis, Indiana. July 14 (World Wide Photo). A fireman making a routine inspection of this building discovered a gasoline leak in the basement. He reported it immediately, but within 12 minutes, before the hazardous situation could be corrected, an explosion occurred killing the fireman and 7 other men in the building. Property loss was estimated conservatively at $3,000,000.



American Legion Hall and Stores, Chicago, Illinois. July 20 (Acme). A clerk attempted to extinguish a fire that started in this two-story brick-veneered frame building and there was a delay of 15 minutes before the fire department was notified. During the ensuing fire fighting, an explosion of accumulated gases in a loft space killed one fire fighter, injured 9 others and approximately 15 bystanders. Loss was estimated at $100,000.

Relating Nozzle Pressure to Friction Loss and Flow

by Warren Y. Kimball

FIREMEN are accustomed to thinking of friction loss as a product of the stream from a given size of tip. Actually, the FL is a result of the velocity of flow through a given size and type of conductor or hose. The FL at any given flow through a line of 2½-in. hose is the same regardless of the size of orifice used to produce the jet.

The accompanying table shows, for example, that a 200 GPM flow produces about 10 lbs. FL in 2½-in. hose regardless of whether that flow is discharged through a ⅞-in. tip at 80 lbs., a 1-in. tip at 45 lbs., a 1⅛-in. tip at 30 lbs., or a 1¼-in. tip at 19 lbs.

Incidentally, a chart such as this can be of value to the alert fire officer or pump operator in showing at a glance the relationship between various nozzle sizes and pressures and GPM flow and FL.

IT also may be observed that the larger tips permit an equivalent discharge at less pump pressure. Let us assume that it is wished to move 250 gallons through a nozzle at the end of a 2½-in. line 500-ft. long. Regardless of size of nozzle tip, with 250 GPM flow, the FL will be 15 lbs. per 100 ft. or 75 lbs. With the 1-in. nozzle 70 lbs. NP will be required to give 250 GPM. The 1⅛-in. nozzle requires 45 lbs. and the 1¼-in. nozzle 30 lbs.

Thus with the 1¼-in. nozzle 50 lbs. less pump pressure is required to move the 250 gallons 500 ft. Of course, this assumes that the nozzle pressure is satisfactory for the job at hand. The horizontal reach of the 1-in. stream at 70 lbs. is 72 ft. The horizontal reach of the 1⅛-in. stream at 45 lbs. is 63 ft., and the reach of the 1¼-in. stream at 30 lbs. is 52 ft.

It may be noted that in this instance, with 250 GPM flowing, a reduction of 40 lbs. NP with a change of tips results in only a loss of 20 ft. reach. Thus, with the same discharge a 57 percent reduction in NP (almost 3/5ths) results in only 28 percent less reach of stream at a substantial saving in required pressure.

With various sizes of tips operating at the same nozzle pressures, the stream from the smaller tips produces less friction loss because less water is flowing, but where velocity of flow is constant or equal, the FL is the same regardless of the size of orifice used to produce and shape the jet.

GPM	Resulting FL per 100 Ft. 2½-in. Hose	Nozzle Pressures to Produce Indicated Flows with Various Tips				
		3/4	7/8	1	1 1/8	1 1/4
400	36.0					75
380	33.0					70
360	30.0				100	
340	27.0				90	60
320	24.0				80	
300	21.0				70	50
280	18.0			100	60	40
260	16.0			90		
240	14.0			80	50	
220	12.0		100	70		30
200	10.0		90	60	40	
180	8.0		80	50		20
160	6.0	100	70	40	30	
140	5.0	90	60		20	
120	4.0	80	50	30		
100	3.0	70	40	20		
		60	30			
		50	20			
		40				

Table showing GPM flows, resulting friction loss in 2½-in. hose, and nozzle sizes and pressures that produce various flows. Similar charts might be prepared for other sizes of hose. A horizontal line from any nozzle pressure for a given tip will indicate gpm discharge and friction loss for that stream and nozzle pressures with other sizes of tips producing the same flow and friction loss.

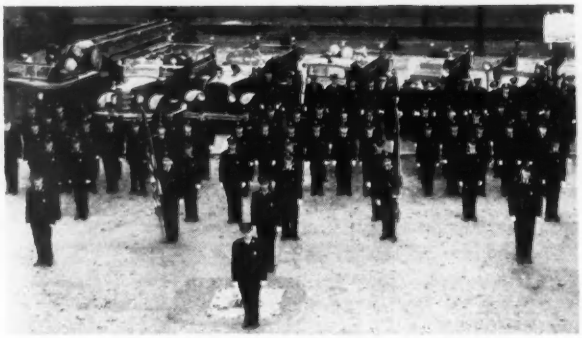
Garden City Fire Department

From a report submitted to FIREMEN by Ex-Captain Henry D. Sayer, Jr., Engine Company

THE Garden City, New York, Fire Department is probably unique in that its operations commenced as part of a real estate promotion. Garden City was originally planned and developed by A. T. Stewart, merchant, and predecessor to the John Wanamaker organization. With the sale of each parcel of real estate, Stewart and his successor, the Garden City Company, contracted to provide essential services, including police and fire protection. The employees of the company all doubled as firemen when necessary, even though they might be regularly employed as clerks or gardeners. Equipment at that time consisted of only a couple hand drawn hose reels and a ladder rig.

From this beginning, the Department grew to its present size and recognized position as one of the finest paid-volunteer groups in Nassau County. Today operations are carried on from three fire stations, and eleven pieces of apparatus are in service. The Department covers a village 5.3 square miles in area, approximately 5 miles long and about one wide. 14,364 people live in this area, and the assessed value of the property is over $59,000,000. The exposure is largely residential, though several large industrial plants, including the famed Doubleday book publishing plant, are also in the village. Several large apartment houses are also covered, as well as an extensive shopping area.

Around the turn of the century, the Garden City Company recognized that it could not keep up adequate fire protection with its own employees. It, therefore, promoted the formation of a regular volunteer organization, staffed by residents of the community. The company provided the equipment and built a substantial two-story building for the trucks and also agreed to furnish horses when it was necessary to roll the equipment, thus relieving the volunteers of the responsibility for stabling and maintaining these animals. This was a convenient arrangement for everyone except the person whose house was burning. Delays in getting the horses to the fire house and then responding to an alarm were a serious problem indeed. Ironically, two of the worst fires in this era destroyed the Garden City Hotel, owned by the realty company, and also a two-story office building of the company.



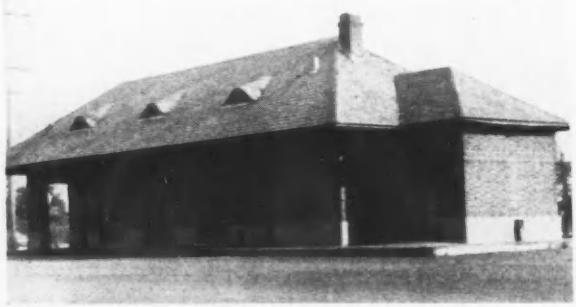
Here is the entire Garden City Fire Department (Member Department of NFPA) prepared for inspection. There are 18 paid members in the department, while the rest are volunteers. (*Drennan Photo.*)

In 1918, the company served notice on all the property owners that it could no longer furnish services and this led to the formation of the incorporated village in the following year. The Fire Department remained independent, however, until May 1920, when it was incorporated and brought within the village government. Since that time it has been supported by tax revenue.

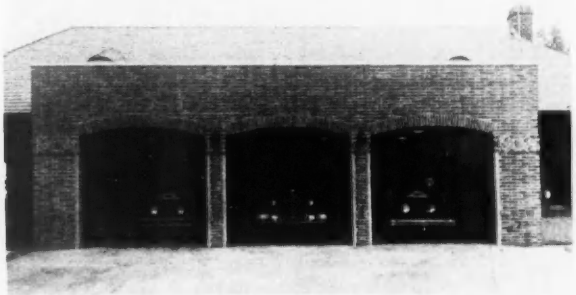
The incorporation of the village brought another headache. In casting about for a building to serve as a village hall, the fire house was selected. The Department had to move some of it's equipment to other buildings and share it's floor space with the Police Department. The meeting rooms became the village offices.

IN 1924 other space was provided for the Police and the equipment was then brought back under one roof. At this time, the Department owned a LaFrance 600-gallon pumper (which is still in service in another small community on Eastern Long Island), a chemical truck and a service ladder truck. In 1927, the village removed its general offices, and the meeting rooms and dormitory were returned to the Fire Department.

This building still serves as the headquarters of the Department today. The equipment is quite different now and delays are not caused by waiting for the horses to be corralled. Instead, three paid firemen are always on duty, ready to respond instantaneously with a 1951



This railroad station was built originally to encourage real estate development in the eastern section of Garden City. After being abandoned for twenty years, it is now the site of a new fire station, built to furnish protection to that area just recently developed.



Transformation of the railroad station resulted in this handsome fire station with space for three pieces of apparatus, a watch room, and a spacious dormitory. Volunteer members of the department take turns on the night shift. (*Drennan Photo.*)

LaFrance 1000-gallon pumper, a 1950 Mack booster truck and a LaFrance Aerial ladder truck.

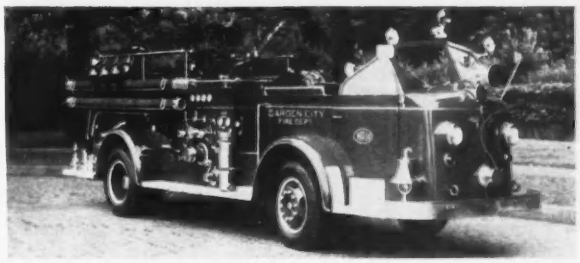
A second station is in operation in the western end of the village. The building was erected in 1930 and is also manned by two paid firemen. Another 1000-gallon pumper serves this area, as does another modern booster truck. A service ladder truck is kept in reserve at this house, for use in an emergency, or in the event of simultaneous alarms.

RECENT development of the properties in the eastern end of the village, both residential and commercial, has required the establishment of a new station in that area. This house was formally dedicated and placed in service in June of this year. The village was fortunate in obtaining title to an abandoned railroad station which had been standing idle for over twenty years. This building has lent itself to conversion very well. The old waiting room has become a three-door apparatus floor, comfortably holding a 900 gpm Seagrave pumper, a booster truck and a foam truck. This latter piece of equipment is kept at this station because of the aircraft hazard from the nearby Mitchell Air Base. The old ticket office has become a watch room, and the baggage room is now a spacious dormitory. Two paid firemen cover the day shift at this house, and the night shift is covered by the volunteers who take turns in sleeping at the house so that immediate response may be made to any alarm.

The personnel of the Department consists of a paid company of eighteen men who drive the equipment and insure immediate response to all fire calls. Since most of the volunteers are commuters with offices in New York, the paid force also assures a good basic source of manpower for dealing with fires during the daytime. The paid men also respond to grass and automobile fires, thus doing away with the necessity of sounding a general alarm for this type of call. The paid company is under the direction of Capt. Leonard Schorr, who has been with the Department for thirty years, and Lieuts. Wilfred Layton and Edward Gorry.

There are some eighty volunteer members of the Department, who respond directly to the scene of the fire upon the sounding of a coded signal on air horns located in various sections of the village. Approximately one-fourth of this number are available for day calls; the rest restrict their activities to night fires.

The volunteers are divided into four companies, engine, truck, chemical and police. In actual practice, however, each man is expected to be able to fill in on any job that may come up, regardless of his company. Proficiency is maintained by means of an arduous schedule of weekly drills during the summer months, and periodic lecture drills in the winter. All members receive NFPA FIREMEN.



Garden City recently placed into service this 1000 gpm American LaFrance pumper which is maintained at the Headquarters station. *(Drennan Photo.)*

THE actual direction of the Departmental operations is the responsibility of the Chief Engineer and his three Assistants. These are volunteer members. The present Chief is Joseph A. Kohart, III, and his Assistants are William Flannery, Richard Leslie and Warren Collins. By custom, the Chief of the Department serves for only one or two years.

As far as losses are concerned, even at the present inflated value of currency, the average annual loss for the past ten years is $28,900. Three fires, all of which involved delayed alarms, account for some sixty per cent of this loss record. Had it not been for these three fires, the average annual loss would have been an incredibly low $11,900. During this same ten-year period, the Department responded to an average of 313 calls per year, 36 of which annually involved buildings or structures.

Fire Prevention inspections are regularly made. Each mercantile, industrial or multiple dwelling exposure is visited at least once each year. Reports are furnished to a Board of Fire Prevention, of which the Chief of the Department is a member, along with the Superintendant of Public Works and the Building Inspector. Where necessary, orders are issued by this Board and compliance is rigidly enforced. A strict building code and cooperation between the Building Department and the Fire Service, has assisted in reducing fire losses.

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Emergency Ladder Truck for Huntington Park, California

THE Huntington Park, California, Fire Department, headed by Chief John M. Slocum, protects a residential community of more than 29,000 population. With three 1,000 pumpers and a 75-foot aerial ladder the Department provided fire protection for the community. Recently, however, Chief Slocum saw the need for an emergency vehicle that could be used to supplement the aerial ladder or as reserve apparatus.

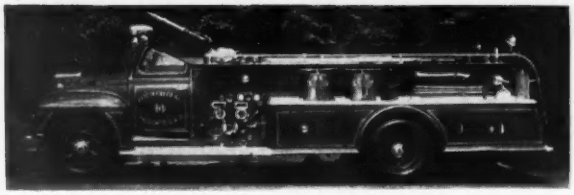
To fill this need, members of the Department developed the ladder truck shown below and at right. Built on a Mack fire truck chassis, it has a 40-ft. aerial ladder that will be adequate for most of the buildings in the community. It is equipped with a duplicate set of the lighting, breathing, cutting, and ventilation equipment carried on the larger aerial and also carries some wooden extension ladders. The picture at right shows the vehicle in use at one of the three training towers in Huntington Park.

Haddonfield, New Jersey, Acquires New Truck

The Borough of Haddonfield, New Jersey, recently added a new emergency truck to supplement its two 500 gpm pumpers and a 75-foot aerial ladder truck. Shown below and at right the vehicle was designed by Jonathon F. Cox, Chief of the Department, and is built on a Diamond T chassis.

The engine develops 130 horsepower and operates the 500 gpm Class A Hale pump. The tank has a capacity of 250 gallons and is equipped with foam and wet water proportioners. Enclosed in a compartment behind the front seat is a 3,500 watt AC generator with an electrically controlled reel of 250 feet of cord. There are also four 500-watt flood lights.

The hose bed carries 1,000 feet of 2½-in. hose and 200 feet of 1½-in. hose. On both sides at the rear of the truck is an electrically operated reel with 200 feet of ¾-in. booster hose. A triple inlet deluge gun is mounted on the platform over the generator. All hose lines are equipped with fog nozzles.



Suction hose, a 24-foot extension ladder, and a 12-foot roof ladder are carried in compartments on either side of the hose bed. Emergency equipment includes an acetylene cutting torch, axes, crow bars, door opener, stretchers, Scott Air-Paks, and hydraulic jacks.

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Gas Explosion at Stevens Point, Wisconsin

ON June 11, at Stevens Point, Wisconsin, a propane gas explosion and ensuing fire destroyed the 1-story furniture store shown above. Investigation revealed a break in a 3-inch cast iron gas main 15 ft. from the building. Apparently gas had leaked through cracks and holes in the foundation into the basement where it ignited when a worker turned on a light switch. Total loss was estimated at $208,560. One person died and two were injured during the explosion and subsequent fire.

When the explosion occurred the roof of the building was raised completely above the walls and then fell into the interior. All exterior walls fell outwards and material was thrown several hundred yards. After a minute or two the middle and rear sections of the building burst into flame, followed by a rapid spread to the front.

An adjacent American Legion club building had extended roof eaves and unprotected windows. It was damaged structurally as a result of the explosion and within five minutes its roof was completely involved in fire. Three other buildings across the street were ignited by radiated heat.

Although there was ample water the Stevens Point Fire Department had available only two pumpers and an aerial ladder with pumper. Immediate assistance of five other fire departments was necessary to control the fire.

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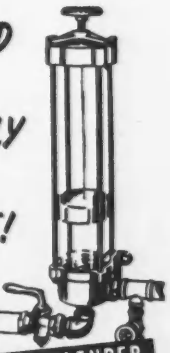

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Fire Safety Training Conference in Ohio

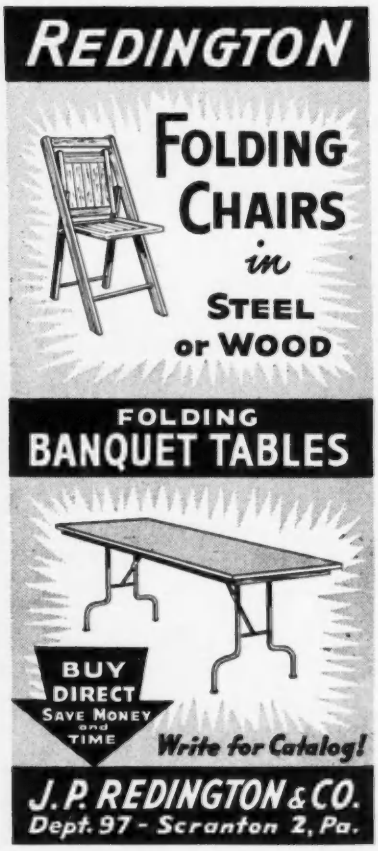
THE Second Annual Fire Safety Training Conference will take place at the Southern Hotel in Columbus, September 12, 13, and 14. The Conference is sponsored by the Ohio Fire Brigades Association, Incorporated, and is intended as an aid towards the organization and training of private and industrial fire brigades.

Further information may be obtained from K. R. Cook, Chairman of the Publicity Committee of the Association, Box 66, Station A, Columbus 1, Ohio.

Kentucky Firemen's Association Annual Convention

THE Kentucky Firemen's Association will hold their annual convention in Lexington, Kentucky, September 18, 19, and 20. Headquarters will be at the Lafayette Hotel.

Reservations may be made through Chief Earle R. McDaniels, Central Fire Station, 3rd and Walnut Streets, Lexington, Kentucky.



Oklahoma A & M Publication

AN interesting bulletin entitled "Some Studies in Chemical Fire Hazards" has been published by the Engineering Experiment Station of Oklahoma Agricultural and Mechanical College. Prepared by Associate Professor R. J. Douglas, head of the Fire Protection Department of the College, and C. E. Thompson, the publication summarizes the results of an investigation into the "chemical compatabilities" of materials.

Test conditions were made to duplicate, as closely as possible, those which frequently occur in industry or in laboratories. The object of the tests were to determine if a dangerous heat reaction occurred when a combustible material, mainly an industrial solvent, and an oxidizing agent were permitted to come into contact.

A total of 424 tests were made and their results tabulated. In 37 contact tests violent heat reactions were observed and in 27 other tests the heat reaction was sufficient to be considered dangerous from the standpoint of fire protection.

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circulates pre-warmed fresh air through wet, coiled hose at the rate of 5 to 6 air changes per minute. Circul-Air is designed to lengthen hose life, save man hours and hard work — improve the appearance and functional design of new fire houses, and to save valuable floor space.

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The secret of increased fire-killing power is *air foam*—that remarkable tried-and-tested invention. With one gallon of Pyrene* Air Foam Compound and 20 gallons of water, you can produce 350 gallons of fast-acting air foam—the *sure* agent for blanketing fire and keeping it from reflashing. And you can do it *instantly*—with no complicated apparatus, no difficult operating tricks. You simply connect a Pyrene Air Foam Playpipe to a hose line. It automatically mixes foam compound and water to produce and discharge huge quantities of air foam. One man can operate the playpipe anywhere your hose lines can go. What's more, it can discharge either foam or plain water.

Think of it! With a 100 gallon water tank, *you can produce 1,750 gallons of air foam*—even though it should be impossible to get more water! And air foam fully equips you to fight flammable liquid fires, as well as those in ordinary combustibles.

Complete outfit—playpipe, pickup tube, adapter, foam compound—only $60

This is no scatterbrained idea dreamed up by some wild-eyed inventor. This equipment was developed by Pyrene—the most honored name in the fire extinguishing field—the acknowledged leader. Right now, this equipment is in use in thousands of fire departments all over the country. Everywhere, they are enthusiastic about the tremendous job this equipment is doing.

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*T.M. Reg. U.S. Pat. Off.

Send coupon today—no obligation

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Yes, we'd like to see how the Pyrene Air Foam Playpipe can multiply the effectiveness of our fire-fighting equipment for just $60. I understand we are under no obligation whatsoever to buy. Have someone come around to our firehouse on _____ (date) at _____ (time).

We can't wait! Send us _____ sets of model PP14 Pyrene Playpipes, Foam Compound, etc., @ $60 each. Our hose thread size is _____.

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U. S. C. Professional Training Program for Firemen

FOR the second year the University of Southern California School of Public Administration has announced a Fire Administration Program designed to provide professional training for firemen which may lead to a certificate in Public Administration with specialization in Fire Administration, and a Bachelor of Science Degree in the same field. Last year 500 firemen from 22 fire departments enrolled in the courses which included general administration such as personnel, budgeting, organization, human relations, and general educational courses.

The courses are given twice each week so that firemen can fit them into their platoon work schedules. The courses cost $18 per unit plus books and supplies. The Curriculum Planning Committee includes representatives of U. S. C. and the Southern California Division of the California Fire Chiefs' Association with Chief William J. Taylor of Burbank as Chairman.

Answers hundreds of questions on the many aspects of defense against atomic, bacterial, and chemical attack — tells about aircraft, guided missiles, poison gases, incendiary bombs, radiation — with methods for protecting industries, communities, homes, and individuals — and a guide to a civilian defense program for national, state, and local governments. By Augustin M. Prentiss, Brig. Gen'l., U.S. Army (Ret.). 429 pages, 64 illus., $6.00.

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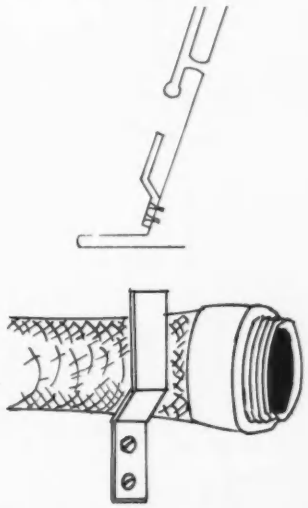
Making and Breaking Couplings at Pumper—One Man



The St. Louis Fire Department has placed above the right hand side of the rear step of every pumper a piece of iron stock to hold the hose while the hoseman at the back step is making or breaking a coupling or is attaching a nozzle. Master Mechanic Fred Witler points out that this simple expedient enables one hoseman to break the line or attach a nozzle with more facility than two men can do the job normally. This frees one man for other work in connection with getting either the large or small lines in service as needed.

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Be Prepared to Fight Forest Fires Now with a HALE Type FZZ Portable Pumping Unit!

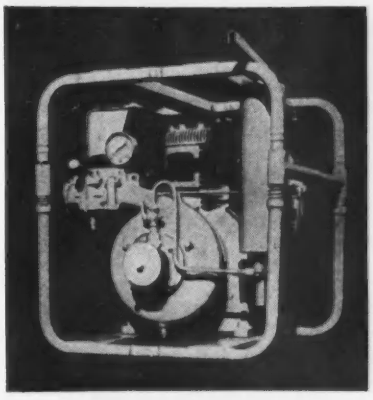
Below are two on-the-spot pictures showing a Hale Type FZZ Portable Pumping Unit fighting a brush fire from a moving truck. The unit can be mounted or carried on virtually any type of equipment, making it extremely valuable for fighting brush, field, and forest fires while in motion. Booster tank is used for source of water.

The Hale Type FZZ is a powerful rugged, ready-to-use unit built specifically for fire fighting. Compact, dependable and efficient, it will stand long hours of continuous pumping. The unit will supply from draft, 60 U. S. Gallons per minute at 90 lbs. pump pressure, and up to 150 U. S. Gallons per minute at 30 lbs. It can supply two capable fire streams through 1½" hose lines using nozzle tips up to ½".

Simplicity in design and reliability are exemplified in the Hale single stage centrifugal pump, bolted direct to a sturdy four-cycle 8.25 HP, single cylinder, air-cooled engine.

A frame-mounted FZZ (with carrying handles turned in) is pictured at right. It can be easily carried to source of water which truck cannot reach, for refilling booster tank or for fighting fire direct.

Unit is also available mounted on two wheels or on rubber-cushioned steel channels.



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Let us know if you want a demonstration.

HALE FIRE PUMP COMPANY

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Fire Pumps in All Standard Capacities

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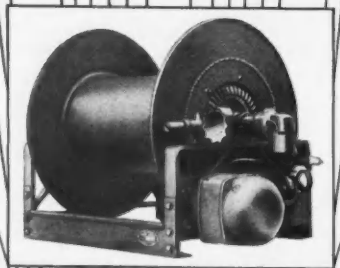
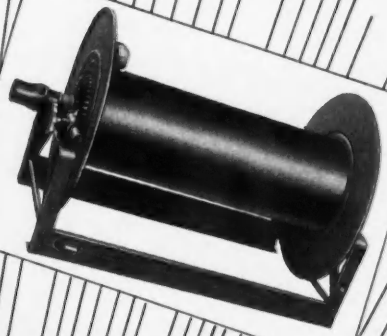
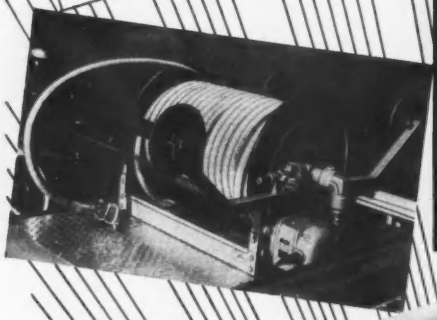
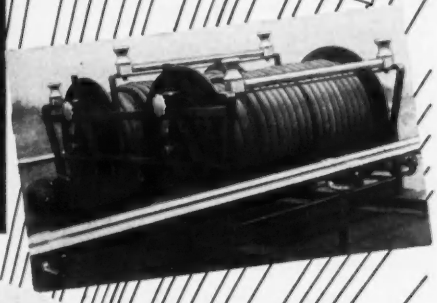
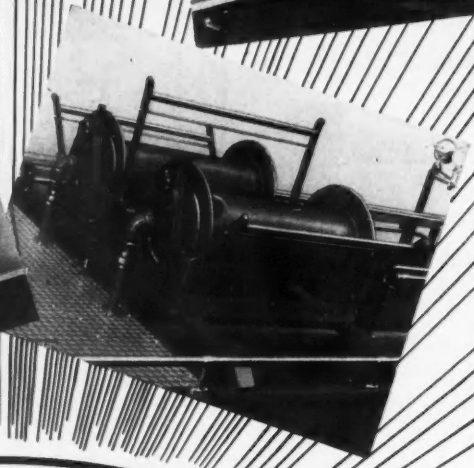




Acceptance of Hannay Hose Reels by the nation's foremost fire fighting equipment manufacturers is the best endorsement of this superior equipment







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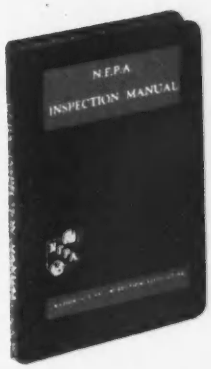

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Richly colored and distinctive in gold and black. Full 14" in diameter.

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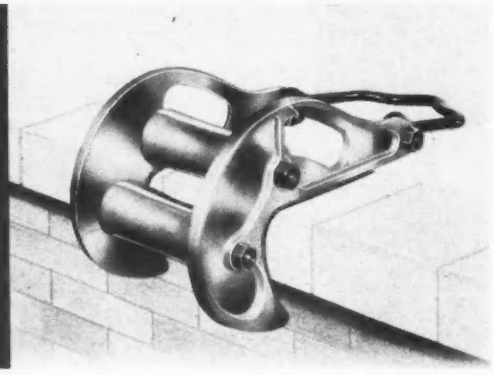

Here's a small, compact and lightweight hose lift to replace the bulky and cumbersome types now in use. Weighs less than 10 pounds and measures only 13" x 8" x 8". It is strongly constructed of rust-proof Woosterlite alloy, bronze bushings and cold rolled steel pins and rope hook. Hook folds back inside the hoist and accommodates a coil of rope without bulking. Wire brush finish, steel parts painted fire department red.

The new "Trumpet" Hose Hoist is the easiest to handle and the safest to use. Each truck should be equipped with one. It's another "Trumpet" feature item.

See your Wooster Brass Representative or write direct for full information.

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THE WOOSTER BRASS CO.
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MANUFACTURERS OF A COMPLETE LINE OF DISTINCTIVE FIRE FIGHTING EQUIPMENT

It's Your Fire Prevention Week

(*Continued from page 10*)

vention bureau under Chief T. C. Zobel. Bureau inspectors visit industrial and business district properties every three months and other properties, except dwellings, twice each year, to enforce fire prevention ordinances.

SINCE a dwelling inspection program was first organized in 1923 by Chief Daniel B. Tierney of Arlington, Massachusetts (Secretary-Treasurer and Past President of the IAFC), this form of fire prevention has become more and more effective. By courteous application of the principles of good public relations, fire department personnel can not only manage to develop safe practices and safe conditions for the homes in their community but can also reap a harvest of good will.

ONE excellent example of this occurred in Bellmead, Texas, not long ago. A new community had been developed in the area protected by the Bellmead Oaklawn Volunteer Fire Department (member department of NFPA). Since the new houses were without numbers and the streets lacked names, the members of that fire department undertook the task of installing the proper identifying symbols. Altogether 275 houses received numbers and 166 streets had names in the space of 150 man-hours. While the department had the "selfish" motive of installing the identification to facilitate response to a possible fire, nevertheless they gained a tremendous good will through personal contact with the people in this area. Voluntary donations from the homes receiving this attention amounted to a profit of $163 and the department personnel had the opportunity to spread a doctrine of fire prevention and fire protection.

SIMILAR personal contact was made by the Delaware Gardens Volunteer Fire Company, No. 1, in Pennsauken, New Jersey, headed by Chief Walter L. Burgen. Here members presented a small card to home owners, asking that it be placed in the vicinity of the telephone. The card carried a number of fire prevention messages with instructions on how to make simple home inspec-

tions and also carried the telephone number to be dialed in case of fire or other emergency. Members of the department made visits to approximately 8,000 homes in the township to assure that the cards were placed in a position of prominence.

ANOTHER form of a fire prevention campaign was that of Chief George J. Riley of Roseland, New Jersey. Chief Riley sent a personal letter to every parent in his community asking them for cooperation in the instruction of children in fire prevention. An emphatic concluding paragraph outlined the legal responsibilities of the parents with respect to the starting of outdoor fires in the community.

The Norfolk, Virginia, Fire Division, headed by Chief R. L. Woolard (member NFPA), last year began another type of fire prevention campaign. Deputy Chief H. S. Beall of the Division had suggested that it would be a good idea if every calendar distributed in the United States carry red-emblazoned numerals for Fire Prevention Week, with the space above the numerals to carry some fire prevention message. Members of the department began a spare-time letter writing campaign seeking cooperation from fire departments, insurance and safety organizations, and other business firms throughout the country. The response to the campaign was very favorable. Distributors of more than 1,000,000 calendars pledged to use this important innovation in their 1952 editions and others are scheduling it for 1953.

THERE are many methods of presenting a fire prevention message and of developing the necessary habits of self-discipline on the part of citizens of a community to create better conditions of safety from fire. Fire Prevention Week is the time for calling attention to the new programs that will be followed through the coming year. This year's slogan for Fire Prevention Week is "Defend America From Fire" (see page 23). With our country lingering on the verge of another possible major war it is important that every individual in the fire service put the full weight of his effort behind the fire prevention program so that he will be making a tangible contribution towards the reduction of fire losses.

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CANADA: SAFETY SUPPLY CO. BRANCHES IN ALL PRINCIPAL CITIES
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Fire Fighting vs.

By Edward N. Montgomery, Deputy Chief
Massachu[illegible]s,

From an address before the Annual Conference
Portsmouth, New Ham[illegible]

SOME time ago, while discussing fire department affairs with several of the chief officers of my Department, one of them commented to the effect that a Fire Prevention Division — as an integral part of the Department — was an unnecessary luxury. According to his opinion, the function of a fire department is to extinguish fires. Needless to say, I did not agree with him.

If we assume that there are two objectives of a fire department, we can fairly state them to be: To prevent fires from starting and to extinguish fires when they do start. I, naturally, belong to the school subscribing to the belief that it is much cheaper to effect number one than number two. It is unfortunate that the public has come to judge the efficiency of a fire department by the appearance of the apparatus and the number of big fires at which it operates. Of course, this is understandable, since we all enjoy the spectacular things in life — and what is more so than a fire department in action. It is positive action. It is drama in every-day life. But, is it always necessary?

From my own experience, I know that the cause of many fires can be traced to the lack of preventive measures. This brings us to the purpose of fire prevention. It is to prevent the occurrence of fire — to prevent the loss of valuable material — to protect the lives and the jobs of our citizens — to prevent the loss of taxable property — to prevent excessive use of fire fighting equipment. Now, you will note that to accomplish these objectives repressive rather than passive action is required. Constructive rather than destructive measures must be taken. To attain these objectives, we must require the exercise of the police power inherent in the state to protect and preserve the public safety. Proper use of these powers makes fire prevention a salable objective.

OF necessity, the fire prevention inspector must be an experienced member of the fire fighting

ng vs. Fire Prevention

uty Chief in Charge, Fire Prevention Division, Boston, ch[illegible]tts, Fire Department

onference of the New England Association of Fire Chiefs, New Hampshire, June 20, 1951

force. His success as an inspector must be founded upon his experience as a fire fighter. As such, he knows what causes fire — how it extends from one place to another; in fact, as a fire fighter, he has seen all these things, and, therefore, knows how to prevent them. Above all, he must realize that there is no conflict between two essential divisions of his department. It hardly seems possible that any man intelligent enough to have passed a civil service examination could believe that an efficiently operated fire prevention division could be detrimental to the fire fighting forces; yet, I have heard that thought expressed many times. To those who sponsor this belief, I can best reply in the words of a grand old fire fighter who was my mentor years ago. "We must have firemen, but we don't have to have fires."

IN these critical times, full cooperation between both divisions is absolutely necessary. All of our military experts have told us that fire is the principal weapon of modern warfare. It matters little whether the fires start from atomic or incendiary bombs — the end result is the same . . . *Destruction*. Now, we all know that to have a fire, we must have fuel; therefore, the less fuel, the smaller the fire. All civil defense authorities stress the necessity for clean attics and cellars if we are to avoid fires from incendiary bombs. Indeed, removal of all combustible rubbish from all buildings is a vital factor in civil defense. In this effort, there must be cooperation between the two divisions. It makes little difference who finds the hazard. What does matter is whether or not it is found and promptly corrected.

When fire hazards are noted, the company officer or the chief officer should not just pass them over by saying, "That's the Fire Prevention Inspector's business!" Fire hazards are his business, too, and should be treated as such, because we are all in the same boat. How about pulling those oars *together!*

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GIVES 10 TIMES MORE LIGHT

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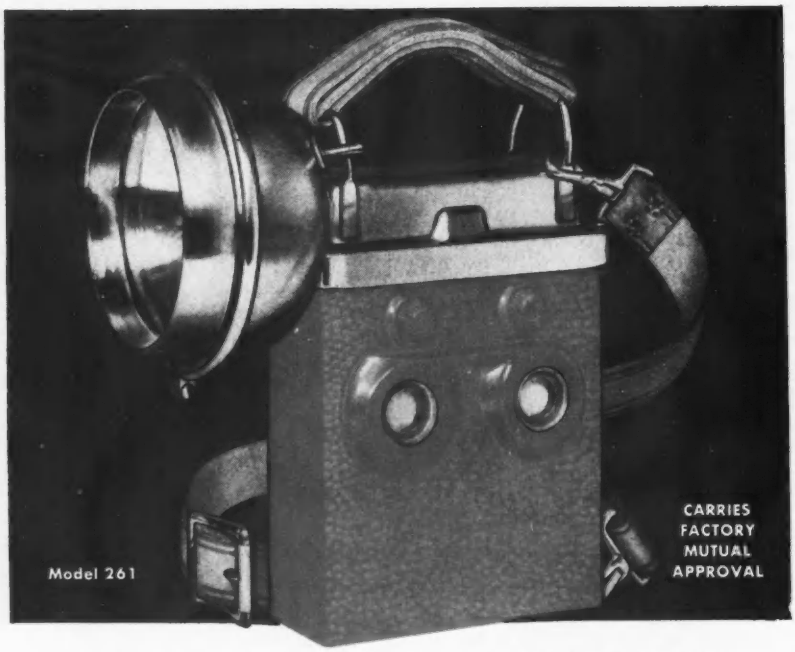

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TOP IN HANDSOME BAKED ENAMEL FINISH

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STATE OF CHARGE EASILY DETERMINED
WITH NEW WHEAT CHARGE INDICATOR

COMPLETELY SEALED WATERPROOF LIGHT SWITCH

STANDARD CHARGERS ALSO CONSIST OF SINGLE AND MULTIPLE UNITS FOR CONNECTION TO AC AND DC CURRENT

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Membership Report

NFPA Welcomes:

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British Columbia: Deep Cove Volunteer Fire Department, Deep Cove.

California: Chief Allan D. Pettingill, Eureka; Chief A. R. Moyer, Ontario; Chief Herbert Mott, Jr., Redondo Beach.

Georgia: Bainbridge Fire Department, Bainbridge; Columbus Fire Department, Columbus; Rome Fire Department, Rome.

Illinois: Des Plaines Fire Department, Des Plaines; Prospect Heights Volunteer Fire Department, Prospect Heights.

Indiana: Chief Clarence J. Bassemier, Evansville.

Iowa: Burlington Fire Department, Burlington.

Kansas: Chief C. V. Plott, Colby; Liberal Volunteer Fire Department, Liberal; Ottawa Fire Department, Ottawa.

Louisiana: North Houma Volunteer Fire Company, Houma.

Michigan: Kent County Volunteer Fire Department, Sparta.

Minnesota: Bloomington Fire Department, Minneapolis.

New York: Municipal Sanatorium, Otisville; Plainview Fire Department, Plainview.

Ohio: Millbury Fire Department, Millbury; Newark Township Fire Department, Newark.

Rhode Island: Chief George F. Salisbury, Central Falls.

South Carolina: Chief Ben Dozier, Florence.

Wisconsin: Marshall Fire Department, Marshall; Oregon Fire Department, Oregon.

? ? ?

WHAT MODEL FOGNOZLE

Incorporates All The Latest Design Changes and Improvements

Answer — the 4 NAP FOGNOZL

Since the inception of the first Griswold FOGNOZL, in the late twenties, several model changes have been placed on the market. This is a natural transition in growing American companies where creative minds are free to exercise their inventive genius for product improvement. The history of FOGNOZL is no exception.

In 1946 the last major model change was effected — the 4 NAP FOGNOZL replacing the Model 4 AF. After five years we are proud to report that the field service record established by the 4 NAP has exceeded all expectations. Some of the outstanding features of this proven FOGNOZL were suggestions given to us by Firemen — "That Man on the Firing Line" — who knew what he wanted in a precision engineered, sturdy, and low upkeep FOGNOZL.

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There are many Fog Nozzles on the market but there is only one Griswold FOGNOZL.*

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Division of

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The FIREWATER Co.

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LOS ALTOS, CALIF.

* Trade Mark

Flaming Oil on Kansas City Waters

(*Continued from page 11*)

ruptured. There were also two lumber yards in the area. During the course of fire fighting operations, when it appeared that the fire was almost under control, burning pieces of lumber would drift through the spreading oil slick and start new fires. Curious sight-seers who cruised around the area in power boats also helped to spread the burning oil slick as they traveled.

There were 27 business places within the four involved city blocks, mostly of brick, part hollow concrete block and frame construction. These buildings were closely grouped and there was a continuous, difficult exposure problem.

On the Kansas side of the boundary line, three fires started including the property of the Continental Oil Company. The Kansas City, Kansas, Fire Department responded to this involved area with 181 men, 12 pumper companies, and 2 ladder companies. Two small fire department boats were used for rescue.

The conflagration burned intensely from 1:14 P.M. on July 13 to 4:00 P.M. on July 16. There has been no official estimate of the damage in this area, but initial estimates were in the vicinity of $5,000,000.

Fire fighters protecting exposures with heavy streams as conflagration subsides. Pumpers took suction from the debris-filled flood water but it was difficult to locate at favorable sites for attacking the fire.

Note burned out industrial buildings in the foreground. Fire fighters from both the Kansas and Missouri Fire Departments were on continuous duty for more than four days and it was several days after that period before the area could be considered safe.

Fire Schools in 1951

Kansas: The Kansas Fire School will be at Hutchinson, October 15-18.

Virginia: The Virginia State Fire School will be conducted at No. 9 Station, 115 Thole Street, Norfolk, September 10-14.

•

IAFC to Publish Book

CHIEF John H. Alderson, President of the International Association of Fire Chiefs has announced that the IAFC will publish a book for use by high school and college instructors on the subject of fire prevention and fire fighting. The book is being prepared by Dr. Claude C. Crawford and Dr. Robert C. Gerletti with the cooperation of the Los Angeles Fire Department.

Over 30 subjects designed to educate citizens in fire prevention will be included. The material was gathered in a fire prevention curriculum "workshop" in which students collected material on the specific subjects.

BRASS EXPANSION RINGS

FOR FIRE HOSE

Standard Sizes Carried in Stock

Inches O. D.	Inches Long	Thick
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¾	⅞	.042
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1	⅞	.042
1¼	¾	.042
1¼	⅞	.042
1¼	1	.042
1½	¾	.051
1½	⅞	.051
1½	1	.051
1½	1¼	.051
2	1	.051
2	1¼	.051
2⅛	1¼	.062
2⅛	1½	.062
2½	1¾	.062
2½	1½	.062
3	2	.070
3½	2	.083
4	2	.083
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FIRE EXTINGUISHING EQUIPMENT

You, who have seen or used an Ansul Dry Chemical Extinguisher at a fire demonstration or on an actual fire, quickly recognized its superior fire-fighting capabilities. Further investigation proves that Ansul "Water-tight Construction" provides greater dependability under severe exposure conditions.

Ansul Hand Portable Models — 4, 4-B, 20-B and 30-B.

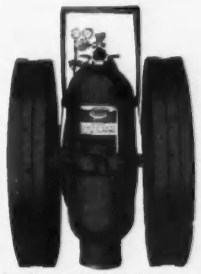
Fire Chiefs, insurance inspectors, safety engineers, etc. recognize Ansul as the leader in the dry chemical extinguisher field. Ansul Fire Extinguishing Equipment and *"PLUS-FIFTY"* Dry Chemical have set unparalleled standards of quality for the fire extinguisher industry.

You get *complete* dry chemical fire protection only from Ansul. There is an Ansul Dry Chemical Fire Extinguisher of the proper size for almost every flammable liquid, gas and electrical fire hazard.

Safeguard your plant and irreplaceable equipment with the *BEST* fire extinguishing equipment available. Protect them with ANSUL EXTINGUISHERS.

ANSUL EXCLUSIVE FEATURES

- Patented Nozzle assures most effective stream pattern . . . Best results by inexperienced operators.
- Special packings in Nozzle and other parts exclude water.
- Corrosion resistant construction throughout.
- Easy on-the-spot Recharging (No tools needed).
- Quick, *positive* puncture operation.
- Special guard protects cartridge . . . rugged construction throughout.
- Ansul *"PLUS-FIFTY"*® Dry Chemical used exclusively.
- Field tested by thousands of satisfied customers.
- Ansul LT Models are the only dry chemical extinguishers listed by U.L. for operation at –65° F.



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Ansul Piped Systems and Stationary Units.

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CENTRIFUGAL FIRE PUMP

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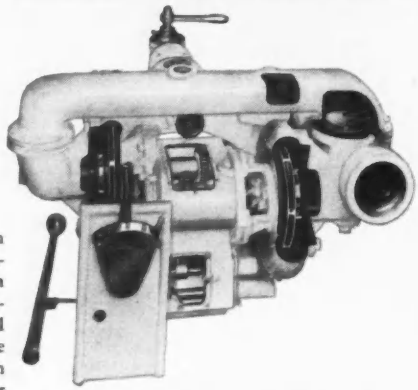

Here is the only two-stage pump with the top effectiveness for every fire fighting problem! The Barton-American DMA has two impellers, each independently shafted and geared. Either will operate alone if the other should be damaged. One impeller delivers high volume at normal pressure . . . the other delivers normal high pressures . . . operating together they produce extremely high pressures for fog gun service *at moderate engine speeds.*

No other two-stage pump is equally versatile. No other pump will give your department more dependability, or more years of service. Ask for bulletin 8733.

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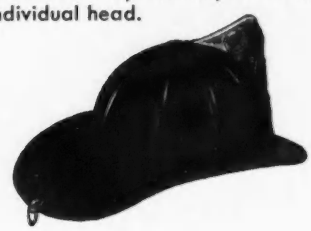

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IT CAN, if your town is one of the thousands equipped with John Bean High-Pressure Fog Fire Fighters.

Here's why: *This amazing apparatus carries its own water supply and allows firemen to go into action immediately without wasting time laying hose.*

In action, the patented Bean Fog Gun, easily operated by *one man*, breaks the water into billions of tiny particles that smother the fire with a blanket of fog. Bean High-Pressure Fog practically eliminates water damage because it outperforms low-pressure water 10 to 1.

Assure your town of maximum protection with minimum fire loss. Write today for a fully illustrated booklet on modern, John Bean fire protection.

Sensational John Bean Features!

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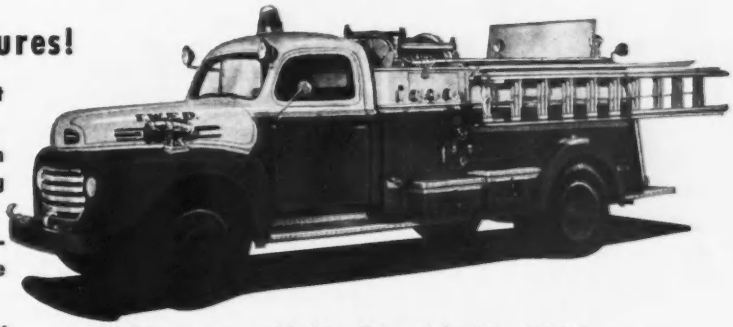

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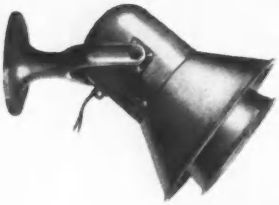

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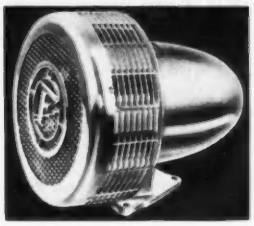

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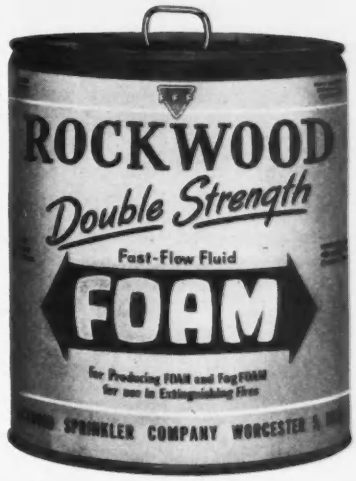

1. Rockwood's new FOAM Liquid produces FOAM and FogFOAM for use in extinguishing flammable liquid fires. It can be automatically mixed with water supplied to the new FFF FogFOAM Nozzle or to the new "FF" Extension by means of the hose line FOAM Eductor — or Rockwood FOAM proportioning systems built into fire trucks. Rockwood regular FOAM is still available for use with Rockwood devices.

2. New *Lightweight* type FFF Rockwood FogFOAM Nozzle with FogFOAM screen. Available in three sizes for service on 1½" and 2½" or 3½" hose. Discharges (1) FogFOAM (with FogFOAM screen) (2) Solid FOAM stream (with FOAM shaper) (3) High velocity WaterFOG pattern.

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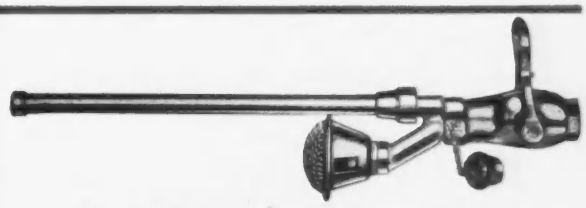

4. Rockwood *Lightweight* "FF" Extension unit with SG-60 WaterFOG Nozzle attached. The "FF" Extension can be easily attached to a ¾", 1" and 1½" SG-60 WaterFOG Nozzle by simply removing high velocity WaterFOG tip and inserting "FF" Extension. This unit discharges high velocity FogFOAM thru FOAM screen or long range solid FOAM stream thru FOAM shaper — also high velocity WaterFOG, solid water stream or low velocity WaterFOG.

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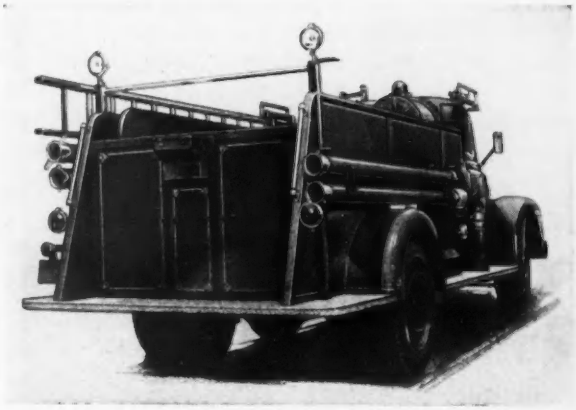

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W. S. DARLEY & CO. Chicago 12

Front and Midship Pumps

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